# INDEX TO PUBLICATIONS FOR 1965[1]

In 1957 the Fisheries Research Board of Canada published Bulletin No. 110 containing a list of the articles in most of its series of publications and Studies that had appeared up to the end of 1954, together with a subject–author index to many of those series. That Bulletin is now out of print. A successor to it that will list and index *all* Board publications and Studies up to the end of 1964, plus many items that did not get included in the Studies, is nearing completion and is expected to appear in 1966.

From 1955 to 1964 inclusive, a subject–author index to all articles in the Journal only has been included in the last issue (No. 6) of each Journal volume. Commencing with this 1965 volume of the Journal, the index is based on: (a) Volume 22 of the Journal of the Fisheries Research Board of Canada; (b) No. 125 (second edition, revised) and 149 of the Bulletins of the Fisheries Research Board of Canada; (c) Circular series from the Fisheries Research Board of Canada establishments issued in 1965 (appearing in time to be included); and (d) Studies (No. 886–970) of the Fisheries Research Board of Canada (reprints of articles published in other periodicals, bound annually in two parts). Lists of titles of individual articles immediately follow the index.

The expansion of the indexing necessitates the following explanatory notes:

*Abbreviations for types of publications* — The types of publications for which lists of articles are given are abbreviated thus:

J — Journal of the Fisheries Research Board of Canada
B — Bulletin of the Fisheries Research Board of Canada

*Circulars of the Fisheries Research Board of Canada*:

CAG — Arctic Biological Station, Ste. Anne de Bellevue, Que.
CHN — Halifax Laboratory, Halifax, N. S.
CLG — Biological Station, London, Ont.
CNG — Biological Station, Nanaimo, B. C. (General series)
CNS — Biological Station, Nanaimo, B.C. (Statistical series)
CJG — Biological Station, St. John's, Nfld.
CPO — Pacific Oceanographic Group, Nanaimo, B.C.
CSG — Biological Station, St. Andrews, N.B. (General series)
CSS — Biological Station, St. Andrews, N.B. (Statistical series)
CVG — Vancouver Laboratory, Vancouver, B.C.
S — Studies of the Fisheries Research Board of Canada

*Other abbreviations* — B 125R refers to the 1965 revised edition of Bulletin No. 125 published under the same title in 1960.

The Provinces and Territories of Canada are abbreviated to:

| | |
|---|---|
| Alta. (Alberta) | N.W.T. (Northwest Territories) |
| B.C. (British Columbia) | Ont. (Ontario) |
| Man. (Manitoba) | P.E.I. (Prince Edward Island) |
| N.B. (New Brunswick) | Que. (Quebec) |
| Nfld. (Newfoundland) | Sask. (Saskatchewan) |
| N.S. (Nova Scotia) | Yuk. (Yukon) |

Certain geographical areas (particularly oceans) have their major subdivisions designated by N. (north), S. (south), E. (east), W. (west), NE. (northeast), etc.

Certain international commissions are commonly referred to as:

ICNAF (International Commission for the Northwest Atlantic Fisheries)
INPFC (International North Pacific Fisheries Commission)
IPSFC (International Pacific Salmon Fisheries Commission)

In the index references, "re" is frequently used to imply "in relation to," "in connection with," and similar meanings; "vs." to imply such meanings as "in contrast to," "as opposed to."

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[1]Prepared by Neal M. Carter.



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## A


Aberrations (*see* Abnormalities; Anomalies)

Abnormalities
J 22(1): 237 (of Newfoundland skates)

Abundance
S 922 (measures from fisheries for more than one species)
940 (southern N.S. haddock)
952 (Fraser River odd-year pink salmon run)

Acclimation
J 22(6): 1455 (thermal, of goldfish)

*Achromobacter cholinophagum*
S 933, 936 (new species that ferments choline)

Acid (*see* Acids; *also* under names of individual acids)

Acids, amino
B 125R: 83 (determination for sea water)
S 929 (lysine in fish protein concentrates)

Acids, fatty (*see also* Lipids)
J 22(1): 131 (of squid lipids)
(5): 1107 (of various marine lipids)
S 921 (and esters: flame ionization detector re carbonyl carbon)
932 (of blubber from lactating grey seal)
942 (gas chromatography of ester mixtures)
944 (stereospecific distribution in triglycerides)
945 (cod liver oil and leatherback turtle dermal oil)

Acids, nucleic (*see also* Nucleosides)
S 895 (deoxyribonucleic acids of Copepoda)

*Acipenser fulvescens* (*see* Sturgeon, lake)

Ackman, Robert George
J 22(1): 131 (lipids of squid)
(4): 875 (dimethyl-β-propiothetin)
S 921 (response of fatty acids and esters in gas chromatography)
932 (grey (Atlantic) seal)
942 (gas chromatography of minor components of mixtures)
945 (cod liver oil fatty acids)

Activity, coefficient of
J 22(1): 113 (of seawater Mg ion)
(4): 885 (of seawater Na ion)

Activity; Exercise; Fatigue
J 22(4): 891 (re acetone bodies and lactic acid in salmonids blood)
(6): 1397 (carp muscle effort metabolism)

Age
J 22(1): 465 (trends in Nfld. longlined cod)
(2): 568 (American plaice, from otoliths)
(2): 605 (composition re size of Nfld salmon)
(3): 673 (Nicola Lake, B.C., kokanee)
(6): 1477 (sockeye and chum salmon by scales)
(6): 1565 (new record for witch flounder)
S 925, 926 (re maturity of NE. Pacific salmons)
940 (composition in landed N.S. haddock)

*Agonus acipenserinus* (*see* Poacher, sturgeon)

Alaska
J 22(1): 101 (Kodiak area king crab reproduction)
(4): 919 (sedimentation rate in a salmon stream)

Albacore (*Thunnus alalunga*)
S 956 (Canadian research in Caribbean Sea)

Aldehydes
J 22(1): 17, 27 (identification re salted cod flavour)

Alderdice, Donald Francis
S 964 (determination of safe levels of toxicants)

Alepocephalidae
J 22(5): 1151 (taxonomy re *Alepocephalus* and *Talismania*)

*Alepocephalus tenebrosus* (a deep-water fish)
J 22(5): 1151 (description and taxonomy of NE. Pacific)

Algae (*see also* Seaweeds)
J 22(6): 1425 (distribution of intertidal re salinity and tides)
S 923, 924 (chlorophylls and carotenoid pigment determination)

Algonquin Park, Ont.
J 22(4): 969 (distribution of some crustaceans and fishes)

Ali, Mohamed Ather
J 22(1): 221 (retina of arctic char)

Alimentary tract
J 22(2): 289 (intraperitoneal, comparison of Great Lakes lampreys)

Allen, John Anthony
J 22(4): 977 (NW. Atlantic Mollusca)

Alton, Miles Samuel
J 22(6): 1407 (brittlestar distribution)

Aluminium compounds
S 957 (in St. Lawrence River and Gulf sediments)

Amberjack, greater (*Seriola dumerili*)
S 956 (Canadian research in Caribbean Sea)

*Ammodytes* (*see* Sandlances)

Ammonia
B 125R: 83 (determination for sea water)

Amphipoda
J 22(4): 1103 (*Anonyx* predation on lobsters)

Analysis
B 125R (manual for sea water)

Anderson, John Murray
J 22(2): 503 (DDT on temperature selection)

Andrews, Cater William
J 22(2): 369 (*Salmo salar* behavior)

Angiography
S 934 (radiography of Pacific salmon cardiovascular system)

Angling
S 920 (forest spraying re Atlantic salmon)

Anomalies (*see also* Abnormalities)
J 22(1): 219 (white sucker fins)

Anonymous
CPO 1965-3 (cruise report, *Ehkoli*)
1965-5 (cruise report, *Ehkoli*)
1965-7 (cruise report, *Whitethroat*)
1965-8 (cruise report, *Whitethroat*)
CJG 12 (Newfoundland fisheries)
S 890 (summaries of ICNAF research, 1962, by subareas)
893 (Atlantic salmon and trout)
905 (Atlantic salmon research)
925 (INPFC Canadian research)
926 (INPFC Canadian research)
965 (Atlantic salmon research)

*Anonyx* (Amphipoda)
J 22(4): 1103 (parasitism on lobster)

*Anoplopoma fimbria* (*see* Sablefish)

Antia, Navel Jamshedji
J 22(3): 793 (phytoplankter enzymes)

Antibiotics (other than tetracycline types) (*see also* Preservatives)
J 22(1): 243 (effect on piscine bacteria)
S 889 (for fish preservation)

Antibiotics (tetracycline types)
J 22(1): 117 (in shrimp preservation)
(1): 243 (effect on piscine bacteria)
S 889 (for fish preservation)

Antioxidants (*see also* Rancidity, oxidative)
J 22(1): 53 (salt vs. polyposphate, for frozen fish)
(4): 929 (effects of metal salts on lean cod muscle, and estimation of)
CVG 34 (effect in improving herring meal nutritive value)
35 (for control of herring meal spontaneous heating)
S 969 (effect in improving herring meal nutritive value)

*Aplodinotus grunniens* (*see* Drum, freshwater)

Apparatus
B 125R: 7 (for sea water analyses)
S 912 (for seawater aquaria system)
960 (for studying pollutant avoidance by young Atlantic salmon)

Applegate, Vernon Calvert
J 22(3): 695 (migrating sea lampreys)

Aquaria
CHN 21 (for holding and displaying live lobsters)
S 912 (seawater system for experimental tanks)
913 (a cause of alkalinity in freshwater supply for)

Arctic Ocean (Canadian) (*see also* Oceanography)
J 22(2): 543 (zooplankton, especially *Calanus* and *Microcalanus*)

*Argis dentata* (a decapod)
J 22(1): 69 (larvae and megalopa from Ungava Bay)

Atrahantseff, Sergei
J 22(6): 1407 (brittlestar distribution)

Athabaska, Lake
S 900 (availability of fishes)
908 (limnology)

*Atheresthes stomias* (*see* Flounder, arrowtooth)

Atlantic Ocean, northwestern (*see also* Hydrography; Oceanography)
J 22(1): 1 (new *Calocaris* species)
(2): 433 (harp seal migrations)
(2): 543 (zooplankton)
(2): 621 (Canadian inshore monkfish seasonal distribution)
(4): 977 (list of Mollusca from, 1946–61)
S 938 (sealing industry)

Atlantic Ocean, western (*see also* Hydrography; Oceanography)
J 22(5): 1313 (postlarval stage of sandlances)

Availability
S 900 (of Canadian fishes)

**B**

Babine Lake system, B.C.
J 22(4): 1025 (tracing sockeye smolt movements by sonar plus photography)

*Bacciger* (Trematoda)
S 937 (review of genus)

Bacillariophyta (*see also* Diatoms)
J 22(3): 793 (phosphatase activity)
(4): 1083 (carbon balance)
(5): 1107 (lipid fatty acids)

Bacteria (in fish processing)
J 22(3): 755 (*Pseudomonas fragi* for inhibiting flesh browning)
S 889 (control of bacterial spoilage in fish)
933, 936 (new species that ferments choline)

Bacteria (reaction towards inhibitors)
J 22(1): 117 (re antibiotics and Mg ion)
(1): 243 (re tetracycline and chemotherapeutic antibiotics)

Bacteria, disease
J 22(3): 713 (for oral immunization of rainbow trout)

Baker Lake, N.W.T.
J 22(1): 239 (deepwater salinity)

*Balanus* (*see* Barnacle)

*Bankia setacea* (a mollusc) (*see* Shipworms)

Barber, Frederick George
J 22(1): 225 (current observations)

Barium compounds
J 22(4): 929 (re oxidative rancidity promotion in cod flesh)

Barnacle
S 895 (*Balanus nubilis* deoxyribonucleic acids)

Barraclough, William Edward
J 22(5): 1305 (dusky sculpin)

Barracuda, great (*Sphyraena barracuda*)
S 956 (Canadian research in Caribbean Sea)

Bary, Brian McKenzie
J 22(3): 823 (ostracod distribution)

Bass, smallmouth (*Micropterus dolomieui*)
J 22(3): 732 (in Bow River system, Alta.)

Bass, white (*Roccus chrysops*) (*Lepibema chrysops*)
B 149: 20, 123 (Great Lakes, catches)

*Bathymaster leurolepis* (*see* Ronquil)

Battle, Helen Irene
J 22(2): 289 (lamprey alimentary tract)

Bay of Islands, Nfld.
J 22(2): 599 (salmon investigations)

Beaton, Barbara
S 898 (blood of aquatic vertebrates)

Beaufort Sea
J 22(2): 543 (zooplankton)

Becker, Clarence Dale
J 22(5): 1175 (salmonid leech)

Behaviour
J 22(1): 173 (environmental, of coho fry)
(2): 369 (young Atlantic salmon to light gradients)
(4): 1035 (re ecology and interaction of young coho and trout)

Bell, Gordon Russell
S 934 (*in vivo* angiography)

Bella Coola area, B.C.
J 22(6): 1523 (pink salmon sea mortality rate estimation)

Belle Isle, Strait of
J 22(2): 433 (harp seal migration)

"Belly-burn"
J 22(4): 955 (re canning partially frozen salmon)

Berry, Richard James
J 22(4): 945 (juvenile winter flounder)

Bideford River, P.E.I.
J 22(3): 851 (Mn deposits on mud-snail shells)

Biely, Jacob
CVG 34 (effect of antioxidants on herring meal)
S 969 (antioxidant treatment of herring meal)

Bilinski, Edward
J 22(4): 891 (acetone in fish blood)

Bilton, Hebert Thomas
J 22(6): 1477 (salmon scale annuli)

Biomass
J 22(4): 945 (estimating theoretical, for winter flounder fishery)

Bishop, Daniel Magnus
J 22(4): 919 (sediment in streams)

Blair, Arthur Avery
J 22(2): 599 (Atlantic salmon)

Bligh, Emerson Graham
J 22(3): 861 (coloured scallop meats)
S 904 (research on quality processing and products)

Blood (*see also* Hemoglobin; Plasma; Serum)
J 22(3): 767 (electropherograms re salmonids and their hybrids for biochemical systematics)
(4): 891 (acetone bodies in salmonids)
(5): 1229 (clotting time of Atlantic cod)
S 898 (total volume in Atlantic cod)
934 (angiography of Pacific salmon)

Blubber
S 932 (fatty acid composition of lactating grey seal)
938 (NW. Atlantic seal industry)

Body proportions
J 22(2): 259 (rare Nfld. skates)

Bonavista, Nfld.
J 22(2): 465 (catch, age, and size trends in cod longlining)

Bonito, Pacific (*Sarda lineolata*)
J 22(3): 853 (in Strait of Georgia, B.C.)

Bordeleau, Michel André
J 22(1): 27 (carbonyl compounds in cod)

Bottles, drift (*see* Drift, determination of)

Bourne, Neil
J 22(2): 313 (scallop drags)
(3): 861 (coloured scallop meats)
(5): 1137 (paralytic shellfish poison)
S 910 (*Placopecten magellanicus*)

Boyd, John William
J 22(1): 53 (drip loss of frozen fish)
(1): 117 (tetracycline antibiotics)
(3): 849 (myxosporidian parasite)

Bras d'Or Lake area, N.S.
S 911 (limnology of barachois ponds)

Brawn, Vivien Mavis
J 22(6): 1555 (swimbladder volume of physoclists)

Brett, John Roland
J 22(2): 405 (pumpkinseed respiration)
(6): 1491 (relation of salmon weight to metabolism)
S 896 (young sockeye, swimming energy required)

Brill (Pacific) (*Eopsetta jordani*) (petrale sole)
S 922 (abundance measures from fisheries for several species)

British Columbia (*see also* Georgia, Strait of; Oceanography, B.C. coast; *also* specific localities)
S 892, 907, 959 (pulp-mill wastes disposal problems)

Brittlestars (echinoderms)
J 22(6): 1407 (bathymetric distribution off Oregon coast)

Brockerhoff, Hans
J 22(3): 643 (lysolecithinase of cod)
S 944 (stereospecific analysis of triglycerides)
967 (hydrolysis of triglycerides)

Browning, of flesh (Maillard browning)
J 22(3): 755 (after freeze-drying lingcod and sole)

Budde, W.
J 22(3): 865 (detection of cysts)

Bumpus, Dean Franklin
S 939 (sea-bed drifters)

Buoyancy
J 22(2): 335 (re young Atlantic salmon and trout swimbladder volume)

Buoys, transponding (*see* Drift)

Burbot (*Lota lota*)
J 22(3): 744 (in Bow River system, Alta.)

Burgher, Robert Douglas
S 945 (cod liver oil fatty acids)

Buss, Keen
J 22(5): 1261 (Esocidae hybrids)

Butler, Terrance Henry
J 22(5): 1305 (dusky sculpin)

## C

Cabezon (*Scorpaenichthys marmoratus*)
J 22(1): 203 (biochemical systematics)

Caddisflies
S 966 (effect of DDT forest spraying in N.B.)

Cadmium compounds
J 22(4): 929 (re oxidative rancidity promotion in cod flesh)

Caesium compounds
S 941 (radioactive $Cs^{137}$ seawater contamination)

*Calanus finmarchicus* (a copepod)
S 895 (deoxyribonucleic acids of)

*Calanus glacialis* (a copepod)
J 22(2): 543 (development rate, Canadian Arctic Ocean)

Calcium compounds
J 22(4): 929 (re oxidative rancidity promotion in cod flesh)
S 957 (in St. Lawrence River and Gulf sediments)

*Caligus gurnardi* (parasitic copepod)
S 951 (review and redescription of)

*Calocaris* (a decapod)
J 22(1): 1 (new species *C. templemani*)

*Calycopsis nematophora* (a medusa)
J 22(3): 841 (distribution and morphology, NE. Pacific)

Campbell, Neil John
S 888 (ICNAF research report, 1962)

*Cancer magister* (*see* Crab, Pacific edible)

Candling
J 22(3): 865 (trials for whitefish fillet tapeworm cysts)

Canning
J 22(4): 955 (partially frozen Pacific salmon)
CHN 22 (nature and control of sulphide discoloration)

Capelin (*Mallotus villosus*)
S 937 (*Pentagramma petrowi* trematode parasitism of Pacific)

*Carassius auratus* (*see* Goldfish)

Carbohydrates (*see also* Glycogen; Sugars)
B 125R: 151 (determination for sea water)

Carbon balance
J 22(4): 1083 (marine phytoplankton)

Carbon dioxide
B 125R: 37 (determination for sea water)

Carbonates
B 125R: 29 (determination for sea water)

Carbonyl compounds (*see also* Acid; Aldehydes; Carbohydrates; Ketones; Sugars)
S 921 (flame ionization detector response for carbonyl carbon)

*Carcharhinus falciformis* (*see* Shark, sickle)

*Carcharhinus milberti* (*see* Shark, sandbar)

*Carcharhinus obscurus* (*see* Shark, dusky)

Caribbean Sea
S 956 (Canadian fisheries research)

Carotenoids
S 923 (re marine-plant pigment determination)

Carp (*Cyprinus carpio*)
B 149: 22, 120 (Great Lakes, catches)

Carp (European)
J 22(6): 1397 (effort metabolism of lateral muscle)

Castell, Charles Howell
J 22(4): 929 (salt-induced rancidity)

Catch
J 22(1): 191 (solution of catch equation)
(2): 313 (scallops, by two drag-ring sizes)
(2): 465 (trends in Nfld. longlined cod)
B 149: 15, 111 (Great Lakes commercial)
CPO 1965-6 (NW. Strait of Georgia coho commercial troll)
CSG 44 (cod: distribution in Gulf of St. Lawrence)
S 922 (abundance measures from mixed)

Catfish, channel (*Ictalurus punctatus*)
B 149: 22 (Great Lakes, catches)

*Catostomus catostomus* (*see* Sucker, longnose)

*Catostomus commersoni* (*see* Sucker, white)

Cedar Lake, Man.
J 22(5): 1123 (limnological features)

Cestoda (*see* Tapeworms)

Chalker, Dorothy Ann
J 22(2): 411 (quality of frozen cod)
(3): 783 (thaw-drip in cod)

Chalkiness of fish flesh
J 22(3): 653 (Pacific halibut)

Chapman, Donald Wallace
J 22(1): 173 (coho behavior)

Chapman, Lyman John
J 22(4): 969 (Ontario crustaceans)

Char, Arctic (*Salvelinus alpinus*) (*Cristovomer alpinus*) (alpine trout)
J 22(1): 211 (retinal structure)
(3): 767 (and hybrids biochemical differentiation)

Char, Windermere (*Salvelinus alpinus willughbii*)
J 22(4): 913 (temperature re egg development and mortality rate)

Chew, Kenneth Kendall
J 22(4): 1099 (*Mytilicola orientalis*)

Chilipepper (*Sebastodes goodei*)
J 22(1): 231 (first B.C. record)

Chilling (*see also* Icing; Sea water, refrigerated; Refrigeration)
S 935 (fish on board vessels)

Chimaeridae
J 22(1): 203 (electropherograms re biochemical systematics)

Chitin
B 125R: 157 (determination for sea water)

Chlorophylls (*see also* Algae; Phytoplankton)
J 22(6): 1575 (*a*, *b*, *c*: nomographs for plankton pigment spectrophotometry)
B 125R: 125 (determination for sea water)
S 923, 924 (re marine-plant pigment determination)

Chlorophyta
J 22(3): 793 (phosphatase activity)
(4): 1083 (carbon balance)

Chlorosity (*see also* Salinity)
B 125R: 11, 183 (determination for sea water, tables)

Choline
S 933, 936 (fermentation by marine *Achromobacter*)

Chromatography, gas (*see* Acids, fatty)

Chrysophyta
J 22(3): 793 (phosphatase activity of some)
(4): 1083 (carbon balance)
(5): 1107 (lipid fatty acids)

Chub, lake (*Hybopsis plumbea*)
J 22(3): 742 (in Kananaskis River system, Alta.)
B 149: 21, 119 (Great Lakes, catches)

Cisco (*Coregonus artedii*) (*Leucichthys artedi*) (lake herring)
J 22(3): 732 (in Bow River system, Alta.)
B 149: 20, 119 (Great Lakes, catches)

Cisco, shortjaw (*Coregonus zenithicus*)
J 22(4): 969 (Algonquin Park, Ont., distribution)

Citric acid and citrates
J 22(1): 53 (for inhibiting drip loss)
(4): (re oxidative rancidity in cod flesh)
CVG 35 (acid, as antioxidant supplement)

Claggett, Freddie Gene
CVG 34 (effect of antioxidants on herring meal)
35 (spontaneous heating in herring meal)
S 969 (antioxidant treatment of herring meal)

Clam, softshell (Atlantic) (*Mya arenaria*)
S 909 (new hydraulic harvesting rake)

Clarke, Arthur Hadleton, Jr.
J 22(2): 631 (ancient sea shells)

*Clupea harengus* (*see* Herring, Atlantic)

*Clupea pallasii* (*see* Herring, Pacific)

Cobalt compounds
J 22(4): 929 (re oxidative rancidity promotion in cod flesh)
S 915 (vitamin $B_{12}$ and cobamide coenzymes)
941 (radioctive $Co^{60}$ seawater contamination)

Cod, Atlantic (biology) (*Gadus morhua*)
J 22(2): 421 ("sphyrion" type tag for)
(2): 465 (catch, age, size trends in Bonavista longlining)
(3): 643 (lengths, weights, liver and gonads weights)
(5): 1229 (blood-clotting time)
CSG 44 (catches distribution in Gulf of St. Lawrence)
S 886, 887, 890, 928, 930, 949, 955 (ICNAF research reports)
928 (catch size effect on otter trawl selectivity)
898 (total blood volume)
958 (impaired hormone metabolism in moribund)
970 (new fishing grounds off Labrador and NE. Nfld.)

Cod, Atlantic (products)
J 22(1): 13 (salting and smoking effects on protein quality)
(1): 17, 27 (carbonyl compounds re flavour of salted)
(1): 83 (glycolytic changes in muscle)
(2): 411 (quality re freezing rate of frozen stored trap cod)
(3): 643 (lysolecithinase in muscle)
(3): 783 (thraw-drip quality of treated and untreated fillets)
(4): 929 (pro- and antioxidant effects of various metal salts on lean muscle)
CHN 20 (identification of fillets by protein electrophoresis)
S 929 (protein concentrate processing and characteristics)
935 (chilling and freezing on board vessels)
945 (liver oil fatty acids as gas chromatography reference standards)

Cod, Pacific (*Gadus macrocephalus*)
J 22(1): 53 (drip and rancidity inhibitors)
(1): 203 (biochemical systematics)

Colour (*see* Pigmentation)

Columbia River
J 22(6): 1407 (brittlestars bathymetric distribution off mouth of)

Comer, Alan George
J 22(2): 307 (shrimp nucleotides)
S 894 (lingcod muscle enzymes)

Composition (biological)
S 952 (of Fraser River odd-year pink salmon run)

*Conchoecia* (ostracods)
J 22(3): 823 (diurnal and seasonal distribution changes)

Condition
J 22(4): 1099 (*Mytilicola* parasite effect on Pacific oyster)

Conroy, David Andrew
J 22(1): 243 (acid-fast bacteria)
(3): 869 (haematology of hake)

Conservation
S 899 (salmons in N. Pacific)

Contamination (*see* Bacteria; Pollution; Radioactivity)

Copepoda (*see also Calanus*)
J 22(2): 558 (development in Arctic Ocean)
(4): 969 (*Senecella* and *Limnocalanus* distribution, Algonquin Park, Ont.)
(6): 1335 (*Cyclops* infection by *Triaenophorus*)
S 951 (review and redescription of *Caligus gurnardi*)

Copper compounds
J 22(2): 425 (Cu–Zn pollutants lethal levels to salmon)
(4): 929 (inducing oxidative rancidity in cod muscle)
B 125R: 113 (determination for sea water)
S 931, 961 (toxicity towards Atlantic salmon)

*Coregonus artedii* (*see* Cisco)

*Coregonus clupeaformis* (*see* Whitefish, lake)

*Coregonus zenithicus* (*see* Cisco, shortjaw)

Cornea (*see* Eye)

Cortisol (*see* Hormones)

Coryphaenidae (*see* Dolphins)

Crab, king (*Paralithodes camtschatica*)
J 22(1): 101 (reproduction)
S 895 (deoxyribonucleic acids of)

Crab, Pacific edible
S 895 (deoxyribonucleic acids of)

*Crassostrea gigas* (*see* Oyster, Pacific)

*Crassostrea virginica* (*see* Oyster, Atlantic)

*Cristovomer* (*see Salvelinus*)

Crop, standing
J 22(2): 399 (brook trout re Ellerslie Brook siltiness)

Crossman, Edwin John
J 22(5): 1261 (Esocidae hybrids)

Crustacea (*see also* common names of species)
S 895 (deoxyribonucleic acids of)

*Culeia inconstans* (*see* Stickleback, brook)

Culture
S 943 (effect of serum on trout gonadal cells)

Curd, in canned fish
J 22(4): 955 (salmon and trout, partially frozen before canning)

Currents (*see also* Drift)
J 22(1): 225 (Fury and Hecla Strait, N.W.T.)
(2): 353 (Northumberland Strait drift)
(3): 689 (NE. Pacific Ocean)
(3): 801 (surface and tidal, re pollution removal)

*Cyclops* species (Copepoda)
J 22(6): 1335 (infections by *Triaenophorus* procercoids)

*Cyprinus carpio* (*see* Carp)

*Cystophora cristata* (*see* Seal, hooded)

Cysts
J 22(3): 865 (tapeworm, candling whitefish fillets for)
(6): 1345 (lymphocystis disease of American plaice)

## D

Dace, blacknose (*Rhinichthys atronasus* ( = *R. atratulus*))
J 22(3): 744 (in Bow River system, Alta.)

Dace, longnose (*Rhinichthys cataractae*)
J 22(3): 744 (in Kananaskis River system, Alta.)

Dale, Jacqueline
J 22(4): 875 (dimethyl-β-propiothetin)

Davenport, Douglas
J 22(5): 1309 (fish measurement)

Day, Lewis Rodman
J 22(2): 635 (killifish)
S 912 (salt-water system at St. Andrews Biological Station)

Daykin, Philip Norman
J 22(1): 159 (environment of fish eggs)

DDT (*see* Insecticides)

Decapoda (*see also* certain individual names of)
J 22(1): 1 (new species of *Calocaris*)
(1): 69 (Ungava Bay *Argis dentata* larvae and megalopa)

Dehydration (*see* Freeze-drying)

Denaturation (*see* Protein)

Denticles
J 22(4): 899 (use in identifying Atlantic skates)

Deoxyribonucleic acid (*see* Acids, nucleic)

Depth
S 908 (re size of lakes)

*Dermochelys coriacea coriacea* (*see* Turtle, leatherback)

Development rate (*see also* Growth)
J 22(2): 558 (Copepoda in Arctic Ocean)
(4): 913 (temperature effect on Windermere char eggs)
(6): 1567 (precocious sexual, in male Atlantic salmon)

Diaciuc, Ion Victor
J 22(6): 1397 (carp metabolism)

Diatoms (*see also* Bacillariophyta)
J 22(3): 793 (phosphatase activity of some marine)
(4): 1083 (carbon balance)
S 916 (of "red water" on west coast of India)

Dickie, Lloyd Merlin
J 22(2): 521 (growth of fishes)

Digestion
J 22(6): 1563 (degradation rate of organisms in, re feed studies)

Dimorphism
J 22(3): 697 (sexual, in immature sea lampreys)

Dinoflagellata
J 22(4): 1083 (carbon balance of "red tide" species)
S 916 (of "red water" on west coast of India)

Dinophyceae
J 22(5): 1107 (lipid fatty acids)

Discoloration (*see* Pigments)

Disease
J 22(3): 713 ("redmouth": oral immunization of trout)
(6): 1345 (lymphocystis of American plaice)

Dispersal (*see* Distribution; Migration; Movements)

Distribution (biological) (*see also* Migration; Movements; Species, new)
J 22(1): 139 (western brook lamprey)
(2): 259 (rare Nfld. skates)
(2): 621 (seasonal, monkfish)
(3): 721 (fishes in Kananaskis River system, Alta.)
(3): 823 (factors affecting diurnal and seasonal of two planktonic ostracods)
(3): 841 (and morphology of a NE. Pacific Medusa)
(4): 969 (some Algonquin Park crustaceans and fishes)
(5): 1151 (two species of NE. Pacific Alepocephalidae)
(5): 1175 (freshwater leech parasitic on salmonids)
(6): 1391 (oceanic, of Pacific salmons traceable by parasites)
(6): 1407 (bathymetric, of Oregon coast brittlestars)
(6): 1425 (of intertidal algae re salinity and tides)
CSG 44 (Gulf of St. Lawrence cod catches)
S 925, 926 (NE. Pacific salmons)
968 (Canadian stoneflies)

Distribution (trade)
B 149: 45 (Great Lakes fisheries products)

Dogfish, Pacific (*Squalus suckleyi*)
J 22(1): 203 (biochemical systematics)

Dollinger, Edward Joseph
J 22(3): 653 (chalkiness in halibut)

Dolly Varden (*Salvelinus malma*)
J 22(3): 736 (in Kananaskis River system, Alta.)

Dolphins (Coryphaenidae)
S 956 (Canadian research in Caribbean Sea)

Doré (*see* Walleye)

Drags, drift (*see* Drift)

Drags, fishing
J 22(2): 313 (scallop catches by two ring-sizes of)

Drift, determination of (*see also* Currents)
J 22(1): 353 (Northumberland Strait, by bottles)
(3): 689 (NE. Pacific Ocean, by transponding buoys)
S 939 (seabottom, by weighted submerged draggers)

Drinnan, Roy Ellis
S 891 (water-pumping recording apparatus)

Drip
J 22(1): 53 (polyphosphate, citrate, and salt as inhibitors)
(4): 955 (after holding salmon in refrigerated sea water)

Driver, Edwin Andrew
J 22(5): 1165 (Manitoba saline lakes)

Drum, freshwater (*Aplodinotus grunniens*) (sheepshead)
B 149: 22, 123 (Great Lakes, catches)

Dryer, William Raymond
J 22(4): 999 (movement of trout in Lake Superior)

Dyer, William John
J 22(1): 83 (glycolytic activity in cod muscles)
(2): 411 (quality of frozen cod)

## E

Echo sounding (*see* Sounding, echo)

Ecology
J 22(1): 173 (environmental and behavioural of juvenile coho)
(2): 565 (Magdalen Shallows American plaice)
(4): 1035 (re behaviour and interaction of young coho and trout)
(5): 1175 (of freshwater leech parasitic on salmonids)

Economics
B 149 (Great Lakes fisheries of Ontario)

Eels (Caribbean Sea)
S 956 (Canadian research)

Eggs, fish (*see also* Gonads; Spawning)
J 22(1): 159 (oxygen mass transport theory for fish)
(1): 247 (centrifugal subsampling re fecundity)
(4): 913 (temperature re mortality and development rate of char)
(6): 1503 (fertility retention in expressed sockeye)

Elasmobranchii (*see also* Dogfish; Shark; Skate)
J 22(1): 203 (electropherograms re biochemical systematics)

Electropherograms
J 22(1): 203, 215 (of fish components re biochemical systematics)
(3): 767 (of salmonid fishes and hybrids components re biochemical systematics)
CHN 20 (for distinguishing cod and haddock fillets)

Ellerslie Brook, P.E.I.
J 22(2): 395 (trout stream population re silt)

Elson, Paul Frederick
J 22(2): 421 (new toggle tag)
(2): 625 (Canadian salmon off Greenland)
S 920 (forest spraying)

*Entosphenus lamottenii* (*see* Lamprey, American brook)
Environment
J 22(1): 173 (effects on coho fry behaviour)
S 893, 905, 965 (re Atlantic salmon biology and management)
964 (mathematical analysis re aquatic pollution)
Enzymes
J 22(3): 643 (lysolecithinase in Atlantic cod muscle, and inhibitors)
(3): 793 (marine phytoplankters phosphatase activity)
S 894 (adenine-deaminating in lingcod muscle)
897 (mononucleotide synthesis by steelhead trout milt)
915 (structure and chemical reactions of cobamide coenzymes)
944 (in triglyceride stereospecific analysis)
967 (differential triglyceride hydrolysis by skate pancreatic lipase)

*Eopsetta jordani* (*see* Brill, Pacific)

Eppley, Richard Wayne
J 22(4): 1083 (phytoplankton photosynthesis)

Erie, Lake (*see also* Great Lakes)
J 22(5): 1197 (whitefish populations year-class fluctuations)

Erskine, John Steuart
J 22(2): 631 (ancient sea shells)

*Esox americanus americanus* (*see* Pickerel, redfin)

*Esox americanus vermiculatus* (*see* Pickerel, grass)

*Esox lucius* (*see* Pike, northern)

*Esox masquinongy* (*see* Maskinonge)

*Esox niger* (*see* Pickerel, chain)

Esters (*see* Acids, fatty; Lipids)

*Eucalia inconstans* (*see* Sticklebąck, brook)

Eulachon (*Thaleichthys pacificus*)
J 22(1): 203 (biochemical systematics)

Euphausids
J 22(5): 1107 (lipid fatty acids)

Exercise (*see* Activity)

Exocoetidae (*see* Flyingfishes)

Exploitation
S 952 (of Fraser River odd-year pink salmon run)

Exploration
S 901 (for fishery resources)
956 (Canadian re Caribbean Sea fisheries)
970 (new cod fishing grounds off Labrador and Nfld.)
Eye
J 22(1): 221 (Arctic char retinal structure)
(2): 513 (European flatfishes retinomotor changes)
(3): 761 (lake trout corneal lesions)

F

Fagerlund, Ulf Henrik Mathias
J 22(3): 775 (post-spawning death of salmon)

Fatigue (*see* Activity)

Fauna, bottom
J 22(5): 1123 (Cedar Lake, Man.)

Favorite, Felix
J 22(3): 689 (transponding oceanographic buoys)
Fecundity
J 22(1): 247 (centrifugal subsampling of fish eggs)
Feed
J 22(2): 265, 270 (of Nfld. rare skates)
(2): 521 (re growth curve of fishes)
(2): 575 (of American plaice)
(2): 608 (of Nfld. salmon)
(5): 1131 (*Limacina* snails affecting Pacific groundfish quality)
(6): 1357 (of Heming Lake, Man., northern pike)
(6): 1383 (photoperiod influence on metabolism in sunfish)
(6): 1563 (studies re digestive degradation rate in salmons)
B 149: 62 (pet and mink, from Great Lakes fisheries)
CVG 34, 35 (antioxidant value in preserving herring meal)
S 969 (antioxidant value in preserving herring meal)

Feeding, method of
S 891 (water-pumping behaviour of lamellibranchs)

Fertility (*see also* Fecundity; Hybrids)
J 22(6): 1503 (retention in expressed sockeye eggs and milt)
Fillets
J 22(2): 414 (cod: quality re freezing rate and storage)
(3): 783 (cod: thaw-drip quality, treated and untreated)
(3): 865 (lake whitefish: candling for tapeworm cysts)
CHN 20 (identification of cod and haddock by protein electrophoresis)
Fins
J 22(1): 219 (anomalies in white sucker)
(1): 237 (abnormalities in thorny skate)
(6): 1345 (lymphocystis disease of American plaice)

Fish flour (*see* Protein concentrate)

Fishing methods (*see also* Catch; Gear; Vessels)
S 903 (Canadian research on improvements for)

Fishmeals
CVG 34 (antioxidant value in improving nutritive value of herring meal)
S 969 (antioxidant value in improving nutritive value of herring meal)

Fisk, Donald
J 22(3): 689 (transponding oceanographic buoys)

Flavour of products (*see* Quality of products)

Fleming, Allister Melville
J 22(2): 465 (Bonavista commercial cod fishery)

Flesh (*see also* Chalkiness; Fillets)
J 22(3): 755 (browning of freeze-dried lingcod and sole)
(4): 955 (colour and firmness in salmon canned after partial freezing)

Flounder, arrowtooth (*Atheresthes stomias*)
J 22(1): 203 (biochemical systematics)

Flounder, starry (*Platichthys stellatus*)
J 22(1): 203 (biochemical systematics)

Flounder, winter (*Pseudopleuronectes americanus*)
J 22(4): 945 (estimating theoretical juvenile biomass for a fishery)

Flounder, witch (*Glyptocephalus cynoglossus*) (greysole)
J 22(6): 1565 (new size record)
S 949, 955 (ICNAF research reports)

Flour, fish (*see* Protein concentrate)

Flukes (Trematoda)
J 22(6): 1387 (re Pacific salmons biological information)
S 937 (review of *Bacciger* and *Pentagramma*; *P. petrowi* from B.C. marine fishes)

Flyingfishes (Exocoetidae)
S 956 (Canadian research in Carribbean Sea)

Foams
S 892, 907 (re pulp-mill pollutive effects)

Foerster, Russel Earle
J 22(6): 1503 (fertility of salmon)

Follett, Wilbur Irving
J 22(1): 139 (*Lampetra richardsoni*)

Food, of animals (*see* Feed)

Fraser, Doris Isabel
J 22(1): 83 (glycolytic activity in cod muscle)

Fraser River system, B.C.
J 22(4): 1035 (young coho and steelhead trout behaviour re ecology in lower tributaries)
S 952 (migration, composition, exploitation, abundance, of pink salmon odd-year run)

Fredin, Reynold Allen
J 22(1): 33 (ocean mortality of salmon)

Freeman, Harry Cleveland
S 858 (impaired hormone metabolism)

Freeze-drying and freeze-dried products
J 22(3): 755 (browning of flesh)

Freezing
J 22(2): 411 (rate effect on stored frozen trap cod)
(3): 783 (effect on cod fillet thaw-drip)
(4): 955 (partial, to preserve salmon before canning)
S 935 (fish on board vessels)

Frick, Harold Clay
B 149 (Great Lakes fisheries economics)

Fromm, Paul Oliver
J 22(3): 761 (keratitis in lake trout)
(6): 1379 (photoperiod effects on sunfish)

Fry
J 22(1): 173 (behaviour of coho salmon)

*Fundulus diaphanus* (*see* Killifish, banded)

*Fundulus heteroclitus* (*see* Mummichog, common)

Fury and Hecla Strait, N.W.T.
J 22(1): 225 (current speed and direction)

## G

Gadd, Ronald Edward Alfred
J 22(3): 755 (freeze-dried fish)

*Gadus macrocephalus* (*see* Cod, Pacific)

*Gadus morhua* (*see* Cod, Atlantic)

*Galeocerdo cuvieri* (*see* Shark, tiger)

*Gambia affinis* (*see* Mosquitofish)

Gear, fishery (*see also* types of gear)
B 149: 65 (Great Lakes commercial fisheries)
S 903 (Canadian improvement research)
928, 940, 949, 954, 955 (ICNAF research reports)
909 (softshell clam hydraulic harvesting rake)

Geiger, Shirley Evelyn
J 22(3): 653 (chalkiness in halibut)
(4): 955 (partial freezing of salmon)

S 947 (sodium, potassium, and magnesium in fish)

Geology
S 908 (Canadian large lakes)
953 (Gulf of St. Lawrence marine)
957 (St. Lawrence River and Gulf recent depositional conditions)

Georgia, Strait of
J 22(3): 853 (Pacific bonito characteristics)
CPO 1965-2 (monthly mean surface temperatures, 1964)
1965-3,5,7,8 (oceanographic cruises reports)
1965-6 (commercial coho troll catches)

Glycerides (*see* Acids, fatty; Lipids)

Glycogen; glycolysis
J 22(1): 83 (post-mortem changes in cod muscle)
(6): 1397 (in carp lateral muscle effort metabolism)

*Glyptocephalus cynoglossus* (*see* Flounder, witch)

*Glyptocephalus zachirus* (*see* Sole, rex)

Goldfish (*Carassius auratus*)
J 22(6): 1455 (thermal effects on ionic regulation)

Gonads (*see also* Eggs; Milt)
J 22(3): 643 (proportion and lysolecithinase activity in cod)
(3): 697 (histology in immature sea lampreys)
(5): 1137 (*Gonyaulax* toxicity in scallop)
S 943 (cells of rainbow trout, growth stimulation by serum)
962 (salmon pituitary hormones effect on immature trout)

*Gonyaulax* (protozoan flagellates) (*see* Shellfish toxicity)

Grainger, Edward Henry
J 22(2): 543 (Arctic zooplankton)

Great Bear Lake, N.W.T.
S 908 (limnology)

Great Lakes (*see also* Erie, Lake; Huron, Lake; Superior, Lake)
J 22(2): 289 (comparison of lampreys alimentary tracts)
(5): 1197 (whitefish populations year-class fluctuations)
B 149 (economic aspects of Ontario fisheries: species, gear, catches, etc.)
S 900 (availability of fishes)
908 (limnology)

Great Lakes Fisheries Commission
B 149: 92 (history)

Great Slave Lake, N.W.T.
J 22(6): 1571 (fall domestic fishery at Snowdrift)
S 900 (availability of fishes)
908 (limnology)
946 (1945–63 fishing fleet)

Greenfield, David Wayne
J 22(3): 857 (six-gilled shark)

Greenland
J 22(2): 422 (Canadian-tagged harp seal recaptures)

Greenling, whitespotted (*Hexagrammos stelleri*)
J 22(1): 203 (biochemical systematics)

Greysole (*see* Flounder, witch)

Gribbles (*Limnoria* isopod wood-borers)
S 948 (indigenous *L. lignorum* and introduced *L. tripunctata* on B.C. coast)

Grinols, Richard Byron
J 22(5): 1151 (Pacific Alepocephalidae)

Groot, Cornelis
J 22(4): 1025 (recording fish movements)

Gross, Willard Louis
J 22(6): 1379 (photoperiod effects on sunfish)

Grosslein, Marvin Darrel
S 940 (haddock off N.S.)

Groundfish, Atlantic
CJG 12 (landings in Nfld.)
S 886, 887, 890, 928, 930, 940, 949, 954, 955 (ICNAF research reports)

Growth (*see also* Development rate)
J 22(2): 281 (effect of light for Atlantic oyster, mussel, quahaug)
(2): 521 (curves and equations re feed of fishes)
(2): 568 (rate, American plaice)
(5): 1229 (and morphometry of four B.C. pygmy whitefish populations)
(6): 1379 (photoperiods influence on green sunfish)

## H

Haddock (biology) (*Melanogrammus aeglefinus*)
S 886, 887, 890, 928, 930, 940, 949, 955 (ICNAF research reports)
928 (catch size effect on otter trawl selectivity)
940 (abundance, age composition of landings, mortality; off N.S.)

Haddock (products)
CHN 20 (identification of fillets by protein electrophoresis)

Haight, Conrad Giles
J 22(6): 1571 (fall fishery at Snowdrift, N.W.T.)

Hake (Argentine) (*Merluccius merluccius hubbsi*)

J 22(3): 869 (hematological study)

Hake, Pacific (*Merluccius productus*)
J 22(5): 1107 (liver lipid fatty acids)

Halibut, Pacific (*Hippoglossus stenolepis*)
J 22(1): 53 (drip and rancidity inhibitors)
(1): 203 (biochemical systematics)
(3): 653 (flesh chalkiness)

*Halichoerus grypus* (*see* Seal, grey)

Hammerhead, scalloped (*Sphyrna lewini*)
S 956 (Canadian research in Caribbean Sea)

Harling, Wayne Robert
J 22(5): 1309 (fish measurement)

Hart, John Lawson
J 22(2): 255 (an appreciation of A. G. Huntsman)

Hartman, Gordon Fredrick
J 22(4): 1035 (behavior of salmon and trout)

Hatchetfish (*Polyipnus asteroides*)
J 22(5): 1303 (range extension for W. Atlantic)

Hayashida, Kaye
J 22(2): 289 (lamprey alimentary tract)

Heat exchange in waters
J 22(6): 1321 (along Canadian Maritimes coast)

Heinicke, Elizabeth Anne
J 22(6): 1455 (thermal acclimation of goldfish)

*Hemilepidotus spinosus* (*see* Irish lord, brown)

Heming Lake, Man.
J 22(1): 219 (white sucker fin anomalies)
(6): 1357 (pike feed)

Hemoglobin (*see also* Blood)
J 22(1): 203, 215 (electropherograms re fish biochemical systematics)
(3): 869 (hematology of an Argentine hake)

Henderson, Eugene Blair
J 22(6): 1567 (Atlantic salmon development)

Hennemuth, Richard Clark
S 940 (haddock off N.S.)

Herring, Atlantic (*Clupea harengus*)
S 887, 955 (ICNAF research reports)
929 (protein concentrate processing and characteristics)
950 (water temperature re Isles-de-la-Madeleine fishery)

Herring, lake (*see* Cisco)

Herring, Pacific (biology) (*Clupea pallasii*)
J 22(1): 203 (biochemical systematics)
S 937: 394 (*Pentagramma petrowi* trematode parasitism)

Herring, Pacific (products)
CVG 34 (value of antioxidants in improving meal nutritive value)
35 (antioxidant control of meal spontaneous heating)
S 969 (value of antioxidants in improving meal nutritive value)

*Hexagrammos stelleri* (*see* Greenling, white-spotted)

*Hexanchus corinus* (*see* Shark, sixgill)

*Hexanchus griseus* (*see* Shark, sixgill)

Heyamoto, Hiromu
J 22(5): 1151 (Pacific Alepocephalidae)

*Hippoglossoides elassodon* (*see* Sole, flathead)

*Hippoglossoides platessoides* (*see* Plaice, American)

*Hippoglossus stenolepis* (*see* Halibut, Pacific)

Histology
J 22(1): 221 (Arctic char retina)
(2): 289 (lampreys intraperitoneal intestinal tract)
(2): 475 (stoneflies)
(2): 513 (eye of flatfishes)
(3): 695 (immature sea lamprey gonads)
(3): 761 (lake trout corneal lesions)
(3): 775 (some organs of post-spawned sockeye)
(6): 1345 (lymphocystis disease of American plaice)

History (*see also* Life history)
B 149: 89 (Great Lakes fisheries regulations and Commission),
143 (fisheries development on each of Great Lakes)

Hodder, Vincent Mackay
CJG 12 (Nfld. groundfish landings)
S 906 (Nfld. squid fishery)
928 (selectivity of otter trawls)

Hoffert, Jack Russell
J 22(3): 761 (keratitis in lake trout)

Hogenkamp, Henricus Petrus Cornelis
S 915 (cobamide coenzyme structure)

Holland, Gilbert Arthur
S 952 (odd-year pink salmon in the IPSFC Convention Area)

Hollister, Henry John
CPO 1965-2 (surface seawater temperatures)
1965-4 (seawater salinities)

Homarine
J 22(2): 307 (in pink shrimp)

*Homarus americanus* (*see* Lobster)

Hormones
S 958 (impaired metabolism in moribund Atlantic cod)
962 (salmon pituitary hormones effect on immature trout gonads)

Horton, Donald B.
J 22(4): 945 (juvenile winter flounder)

Hourston, Alan Stewart
S 952 (odd-year pink salmon in the IPSFC Convention Area)

Houston, Arthur Hillier
J 22(6): 1455 (thermal acclimation of goldfish)

Hoyle, Richard James
S 967 (hydrolysis of triglycerides)

Humber River, Nfld.
J 22(2): 599 (salmon investigations)

Huntsman, Archibald Gowanlock
J 22(2): 255 (an appreciation of)

Huron, Lake (*see also* Great Lakes)
J 22(5): 1197 (whitefish populations year-class fluctuations)

*Hybopsis plumbea* (*see* Chub, lake)

Hybrids
J 22(3): 732 (cutthroat × rainbow trouts), 743 (lake chub × longnose dace)
(3): 767 (between *Salmo, Salvelinus, Cristovomer*: biochemical differentiation)
(5): 1261 (between pickerels, pike, and maskinonge)

Hydrography (*see also* Oceanography)
S 886, 887, 888, 949, 955 (ICNAF research reports)
956 (Caribbean Sea)

*Hydrolagus colliei* (*see* Ratfish)

*Hypomesus pretiosus* (*see* Smelt, surf)

I

*Icelinus burchami* (*see* Sculpin, dusky)

*Ichthyomyzon fossor* (*see* Lamprey, northern brook)

*Ichthyomyzon unicuspis* (*see* Lamprey, silver)

Icing
S 935 (fish on board vessels)

ICNAF (*see* International Commission for the Northwest Atlantic Fisheries)

*Ictalurus punctatus* (*see* Catfish, channel)

Ide, Frederick Palmer
S 963 (Nymphomyiidae)
966 (effects of forest spraying)

Idler, David Richard
J 22(2): 411 (quality of frozen cod)
(3): 783 (thaw-drip in cod)
S 958 (impaired hormone metabolism)

*Illex illecebrosus* (*see* Squid, Newfoundland)

Illumination (*see* Light, reactions to)

India
S 916 ("red water" occurrence on west coast)

Indian Arm, B.C.
J 22(3): 823 (diurnal and seasonal distribution changes of two planktonic ostracods)

Ingraham, Woodrow James, Jr.
J 22(3): 689 (transponding oceanographic buoys)

Injury
J 22(2): 639 (lobster abdominal membrane lesions)
S 910 (shell repair by sea scallops)

INPFC (*see* International North Pacific Fisheries Commission)

Insecticides
J 22(2): 503 (DDT effect on young Atlantic salmon temperature selection)
S 893, 905, 920, 965 (DDT forest spraying effects on Atlantic salmon and trouts)
966 (DDT effect on aquatic insects)

Insects, aquatic
J 22(2): 475 (new species and records of stoneflies)
S 963 (new genus of Nymphomyiidae found in N.B.)
966 (effect of DDT forest spraying in N.B.)

Insolation (*see also* Photosynthesis)
S 919 (re cloud amount and sun altitude over ocean)

Interaction
J 22(4): 1035 (between underyearling coho and steelhead trout)

International Commission for the Northwest Atlantic Fisheries (ICNAF)
S 886, 887, 888, 890, 949, 955 (Canadian research participation reports re groundfish; other commercial species; gear; hydrography)
928 (catch size effect on otter trawls selectivity)
940 (N.S. haddock abundance, age, mortality)
954 (minimum mesh size data re regulations)

International North Pacific Fisheries Commission (INPFC)
S 925, 926 (Canadian research progress, 1962, 1963)

International Pacific Salmon Fisheries Commission (IPSFC)
S 952 (migration, composition, exploitation, abundance, of Fraser River odd-year pink salmon runs)

Intestine
J 22(3): 775 (histology, of post-spawned sockeye)

IPSFC (*see* International Pacific Salmon Fisheries Commission)

Irish lord, brown (*Hemilepidotus spinosus*)
J 22(1): 203 (biochemical systematics)

Iron compounds
J 22(4): 929 (re oxidative rancidity promotion in cod flesh)
B 125R: 97 (determination for sea water)
S 941 (radioactive $Fe^{55}$ seawater contamination)

Iles-de-la-Madeleine, Gulf of St. Lawrence
S 950 (water temperatures re herring fishery)

*Isopsetta isolepsis* (*see* Sole, butter)

Isotopes
S 941 (radioactive, as seawater contaminants)

*Isurus oxyrhinchus* (*see* Mako)

## J

Jackfish (*see* Pike, northern)

Jangaard, Peter Michael
J 22(1): 131 (lipids of squid)
CHN 22 (sulphide discoloration ("smut"))
S 932 (grey (Atlantic) seal)

Jean, Yves Marie Louis
J 22(2): 621 (Canadian Atlantic monkfish)

Johnson, Lionel
J 22(1): 239 (salinity of Baker Lake, N.W.T.)

Jonas, Richard Edmund Ernest
J 22(4): 891 (acetone in fish blood)

## K

Kananaskis River system, Alta.
J 22(3): 721 (fish introduction and dams re fishes of)

Katkansky, Stanley Charles
J 22(4): 1099 (*Mytilicola orientalis*)

Katz, Max
J 22(5): 1175 (salmonid leech)

Kay, William Wayne
J 22(4): 955 (partial freezing of salmon)
S 947 (sodium, potassium, and magnesium in fish)

Keleher, James John
J 22(6): 1571 (fall fishery at Snowdrift, N.W.T.)
S 946 (Great Slave Lake fishing fleet)

Kerswill, Charles James
J 22(2): 281 (shellfish growth)
(2): 625 (Canadian salmon off Greenland)
S 920 (DDT forest spraying in N.B.)

Ketchen, Keith Stuart
S 922 (measures of species abundance for certain fisheries)

Ketones
J 22(1): 17 (identification re salted cod flavour)
(4): 891 (acetoacetate and $\beta$-hydroxybutyrate in salmonid blood)

Keys
J 22(2): 475 (stonefly species)
(5): 1296 (*Bathymaster* ronquil species)

Killifish, banded (*Fundulus diaphanus*) (freshwater mummichog)
J 22(2): 635 (probable toxicity to warm-blooded animals)

King, George Robert
J 22(4): 999 (movement of trout in Lake Superior)

Klontz, George William
J 22(3): 713 (redmouth disease)

Kohler, Allan Carl
CSG 46 (St. Lawrence cod fishery)
S 956 (fisheries research in Caribbean Sea)

Kokanee (*Oncorhynchus nerka*) (landlocked sockeye salmon)
J 22(3): 665 (factors affecting spawning entry into a lake tributary)

## L

Labrador
S 970 (new cod fishing grounds off coast)

Lactic acid
J 22(4): 891 (in exercised salmonids)
(6): 1397 (in carp lateral muscle effort metabolism)

Laishley, Edward
J 22(2): 411 (quality of frozen cod)

Lakes (*see also* Limnology *and* names of individual lakes)

S 900 (large Canadian, re availability of fish)
908 (large Canadian: physiography and limnology)

Lakes, saline
J 22(5): 1165 (limnology of west-central Manitoba)
S 911 (limnology of Bras d'Or Lake area barachois ponds)

*Lampetra lamottei* (*see* Lamprey, American brook)

*Lampetra richardsoni* (*see* Lamprey, western brook)

Lamprey, American brook (*Lampetra lamottei*) (*Entosphenus lamottenii*)
J 22(2): 289 (alimentary tract comparative study)

Lamprey, Michigan brook (*see* Lamprey, northern brook)

Lamprey, northern brook (*Ichthyomyzon fossor*) (Michigan brook lamprey)
J 22(2): 289 (alimentary tract comparative study)

Lamprey, sea (*Petromyzon marinus*)
J 22(2): 289 (alimentary tract comparative study)
(3): 695 (sexual ratios and dimorphism in immature)
B 149: 104 (effect on Great Lakes fisheries; control)

Lamprey, silver (*Ichthyomyzon unicuspis*)
J 22(2): 289 (alimentary tract comparative study)

Lamprey, western brook (*Lampetra richardsoni*) (*L. planeri*)
J 22(1): 139 (distinguished as new non-parasitic species)

Landings
CJG 12 (groundfish in Nfld.)

Lanternfishes (Myctophidae)
S 956 (Canadian research in Caribbean Sea)

Larkin, Peter Anthony
S 908 (large Canadian lakes physiography and limnology)

Larvae
J 22(1): 69 (of decapod *Argis dentata*)
(5): 1313 (of W. Atlantic sandlances)

Lauzier, Louis Marcel
J 22(2): 353 (drift bottle observations)
(6): 1321 (marine climate comparisons)
S 888 (ICNAF research report, 1962)
939 (sea-bed drifters)
950 (water temperature and herring fishing)
956 (fisheries research in Caribbean Sea)

Lawler, George Herbert
J 22(1): 219 (white sucker fin anomalies)
(5): 1197 (Lake Erie whitefish)
(6): 1335 (natural infections of cyclopid copepods)
(6): 1357 (food of the pike)

LeBrasseur, Robin John
J 22(6): 1563 (degradation of consumed organisms)

Lecithin
CVG 35 (as antioxidant supplement)

Lee, Arthur James
S 939 (sea-bed drifters)

Leech, salmonid (*Piscicola salmositica*)
J 22(5): 1175 (distribution, ecology, biology)

Lei Ching, Hilda
S 937 (*Bacciger* and *Pentagramma*)

Length (*see also* Length-weight ratio; Size)
J 22(5): 1309 (new type of board for measuring length frequencies)

Length-weight ratio
J 22(3): 702 (immature sea lampreys)

*Lepibema chrysops* (*see* Bass, white)

*Lepidopsetta bilineata* (*see* Sole, rock)

*Lepomis cyanellus* (*see* Sunfish, green)

*Lepomis gibbosus* (*see* Pumpkinseed)

Lesions (*see also* Injury)
J 22(3): 761 (corneal, in hatchery lake trout)

Lesser Slave Lake, Alta.
S 900 (availability of fishes)

*Leucichthys* species (*see* Cisco)

Leung, Tat Chi
CHN 20 (identification of fillets)

Li, Ming Fang
S 943 (growth of rainbow trout)

Life history
J 22(2): 565 (American plaice in Magdalen Shallows)

Light, and reactions to
J 22(2): 281 (effect on growth of Atlantic oyster, mussel, quahaug)
(2): 369 (young Atlantic salmon behaviour to photoperiods and gradients)
(3): 825 (gradients re marine ostracod distribution)
(6): 1379 (photoperiods influence on green sunfish growth)

*Limacina helicina* (marine planktonic snail)
J 22(5): 1311 (in feed of B.C. groundfish affects quality)

*Limnocalanus macrurus* (a copepod)
J 22(4): 969 (Algonquin Park, Ont., distribution)
Limnology
J 22(3): 665 (Nicola Lake, B.C.)
(5): 1123 (Cedar Lake, Man.)
(5): 1165 (saline west-central Manitoba lakes)
S 900 (Canadian lakes re availability of fish)
908 (Canadian large lakes)
911 (barachois ponds in Bras d'Or Lake area, N.S.)

*Limnoria* (*see* Gribbles)

Lingcod (*Ophiodon elongatus*)
J 22(1): 203 (biochemical systematics)
(3): 755 (browning of freeze-dried flesh)
S 894 (muscle adenine deamination enzymes)

Lipids (*see also* Acids, fatty)
J 22(1): 131 (of Nfld. squid)
(3): 643 (lysolecithinase action on cod phospholipids)
B 125R: 147 (determination for sea water)
CVG 34 (energy value in herring meal)
35 (oxidation causing heating of fish meals)
S 944 (stereospecific analysis of triglycerides)
967 (triglycerides hydrolysis by skate pancreatic lipase)

Lippa, Erich Johannes Richard
J 22(5): 1311 (contamination of groundfish)

Lithium compounds
J 22(4): 929 (re oxidative rancidity promotion in cod flesh)
Liver
J 22(1): 131 (lipids and component fatty acids of squid)
(3): 643 (percentage and lysolecithinase activity in cod)
(3): 775 (histology, of post-spawned sockeye)
(5): 1107 (lipid fatty acids of Pacific hake and whiting)
(5): 1137 (*Gonyaulax* toxicity in scallop)
S 945 (Atlantic cod: oil fatty acids)

Lobster (*Homarus americanus*)
J 22(2): 385 (survival out of water)
(2): 421 (toggle tag new design)
(2): 639 (abdominal membrane lesions)
(4): 1103 (*Anonyx* parasite of)
CHG 21 (unit for holding and displaying live)
CSG 45 (handling and shipping care for live)
S 927 (oxygen consumption)

Longlining
J 22(2): 465 (cod: catch, age, size)

*Lophius americanus* (*see* Monkfish)

Loring, Douglas Howard
S 953 (geological investigations in the Gulf of St. Lawrence)
957 (depositional conditions in the St. Lawrence region)

Lorz, Harold William
J 22(3): 665 (movement of mature kokanee)
*Lota lota* (*see* Burbot)

*Lumpenus sagitta* (*see* Prickleback, snake)

*Lutjanus* species (*see* Snappers)

## M

MacCallum, Wallace Allison
J 22(2): 411 (quality of frozen cod)
(3): 783 (thaw-drip in cod)
S 935 (chilling and freezing fish on board vessels)

MacLaren, Alethea
B 149: 143 (history of Great Lakes fisheries)

MacLean, Jill
J 22(4): 929 (salt-induced rancidity)

Macnab, Heather Claire
J 22(5): 1299 (blood clotting in cod)
S 898 (blood of aquatic vertebrates)

MacPhail, John Stuart
S 909 (new hydraulic clam rake)

Magdalen Shallows, Gulf of St. Lawrence
J 22(2): 565 (life history of American plaice)

Magnesium compounds
J 22(1): 113 (seawater Mg ion activity coefficient)
(1): 117 (re antibiotic bacteria inhibitors)
(4): 929 (re oxidative rancidity promotion in cod flesh)
(4): 955 (Mg ion change in salmon held in refrigerated sea water)
S 947 (Mg ion changes in fish held in refrigerated sea water)

Maillard browning (*see* Browning, of flesh)

Mako (*Isurus oxyrhinchus*)
S 956 (Canadian research in Caribbean Sea)

Malacostraca
J 22(4): 969 (*Mysis* and *Pontoporeia* distribution in Algonquin Park, Ont.)

*Mallotus villosus* (*see* Capelin)

Management (*see also* International Commission for the Northwest Atlantic Fisheries; International North Pacific Fisheries Commission; International Pacific Salmon Fisheries Commission)
S 893 (Atlantic salmon and brook trout research program, 1962–63)
902 (of fisheries populations for fisheries development)

Manganese compounds
J 22(3): 851 (deposit on mud-snail shells, P.E.I.)
B 125R: 107 (determination for sea water)
S 941 (radioactive $Mn^{54}$ seawater contamination)

Manitoba (*see also* certain individual localities, e.g. Heming Lake)
J 22(5): 1123 (Cedar Lake limnology)
(5): 1165 (west-central saline lakes Classification)

Mann, David Seymour
S 912 (salt-water system at St. Andrews Biological Station)

Mantle (of shellfishes)
J 22(5): 1137 (*Gonyaulax* toxicity in scallops)

Manzer, James Ivan
J 22(3): 853 (Strait of Georgia bonito)

March, Beryl Elizabeth
CVG 34 (effect of antioxidants on herring meal)
S 969 (antioxidant treatment of herring meal)

Marcotte, Alexandre
J 22(6): 1321 (marine climate comparisons)
CSG 44 (distribution of cod catches)

Margolis, Leo
J 22(6): 1387 (parasites as biological indicators)
S 937 (*Bacciger* and *Pentagramma*)

Markert, John Richard
J 22(1): 215 (*Oncorhynchus* species identification)

Markets
B 149: 25 (Great Lakes fisheries products)

Marking
J 22(6): 1477 (pink salmon for comparing scale age)
(6): 1523 (pink salmon for sea mortality rate estimation)

Martin, Nigel Vernon
J 22(4): 969 (Ontario crustaceans)

Martin, William Robert
S 887 (ICNAF research report, 1962)
903 (research on improvement of fishing methods)

Maskinonge (*Esox masquinongy*) (muskellunge)
J 22(5): 1261 (hybrids with other Esocidae)

Mason, John Christopher
J 22(1): 173 (coho behavior)

Masu (*Oncorhynchus masou*) (masu salmon)
S 899 (ocean stocks and fishery developments)

Mathematical treatment
J 22(1): 33 (estimating Pacific salmons ocean mortality)
(1): 159 (oxygen mass transfer re fish-egg respiration)
(1): 191 (catch equation)
(2): 521 (growth curve of fishes)
(4): 945 (estimating theoretical biomass for a fishery)
(6): 1523 (pink salmon sea mortality rate estimation)
B 125R: 5 (statistical limits in sea water analyses)
S 959 (pulpmill effluent sedimentation)
964 (analysis of experimental multivariable environments re aquatic pollution)

Matter, particulate, in natural waters
J 22(5): 1107 (marine lipid fatty acids)
B 125R: 117 (determination for sea water)

Maturity
S 925, 926 (re age of NE. Pacific salmons)

May, Arthur William
S 928 (selectivity of otter trawls)
970 (new cod fishing grounds)

Mayflies
S 966 (effect of DDT forest spraying in N.B.)

McAllister, Donald Evan
J 22(6): 1559 (widow rockfish)

McBride, John Raymond
J 22(3): 775 (post-spawning death of salmon)

McCart, Peter
J 22(5): 1229 (pygmy whitefish)

McCracken, Francis Derwood
CSG 44 (distribution of cod catches)
S 930 (future of groundfishing industry)
940 (haddock off Nova Scotia)
954 (minimum mesh sizes)

McHardy, Robert Alexander
J 22(3): 823 (ostracod distribution in B.C.)

McLeese, Donald Wilson
J 22(2): 385 (lobster survival in air)
(2): 639 (lesions on lobsters)
S 912 (salt-water system at St. Andrews Biological Station)
927 (oxygen consumption of the lobster)

McPhail, John Donald
J 22(5): 1293 (new ronquil from Aleutian Islands)

Meals, fish (*see* Fishmeals)

Medcof, John Carl
J 22(2): 281 (shellfish growth)
(2): 631 (ancient sea shells)
(2): 635 (killifish)
S 909 (new hydraulic clam rake)
910 (*Placopecten magellanicus*)
955 (ICNAF research areas)

Medusa
J 22(3): 841 (*Calycopsis nematophora* distribution and morphology in NE. Pacific Ocean)

Megalopa
J 22(1): 69 (of decapod *Argis dentata*)

*Melanogrammus aeglefinus* (*see* Haddock)

Menominee (*see* Whitefish, round)

*Mercenaria mercenaria* (*see* Quahaug)

Meristic characteristics (*see also* Species, new)
J 22(3): 853 (Strait of Georgia Pacific bonito)
(4): 899 (in distinguishing little from winter skate)
(6): 1559 (widow rockfish)

*Merluccius merluccius hubbsi* (*see* Hake (Argentine))

*Merluccius productus* (*see* Hake, Pacific)

Mesh (*see* Nets)

Metabolism
J 22(6): 1372 (re size of northern pike and its feed)
(6): 1397 (effort in carp lateral muscle)
(6): 1491 ($O_2$ consumption re sockeye swimming speed and size)
CVG 34 (metabolizable energy of herring meal)
S 896 (respiratory of swimming young sockeye)
958 (moribund Atlantic cod impaired hormone)
969 (metabolizable energy of herring meal)

Michigan, Lake (*see* Great Lakes)

*Microcalanus pygmaeus* (a copepod)
J 22(2): 543 (development rate in Canadian Arctic Ocean)

*Micropterus dolomieui* (*see* Bass, smallmouth)

*Microstomus kitt* (*see* Sole, merry)

*Microstomus pacificus* (*see* Sole, Dover)

Migration (*see also* Distribution; Movements; Spawning; Tagging)
J 22(2): 433 (NW. Atlantic harp seals)
(2): 625 (Canadian and European salmon to Greenland)
(4): 1025 (recording sockeye smolt movements by time-lapse photography of sonar traces)
S 952 (of Fraser River odd-year pink salmon run)

Miller, Bruce
J 22(3): 857 (six-gilled shark)

Milt (*see also* Gonads)
J 22(6): 1503 (sperm fertility retention from expressed sockeye)
S 897 (mononucleotide synthesis by extract of steelhead trout)

Minnow, flathead (*Pimephales promelas*)
J 22(3): 744 (in Bow River system, Alta.)

Mitchell, Barbara Susan
S 962 (pituitary hormones of salmon)

Mollusca
J 22(4): 977 (records from NW. Atlantic, 1946–61)

Monkfish (*Lophius americanus*)
J 22(2): 621 (Canadian Atlantic inshore distribution)

Moore, Barbara
J 22(4): 929 (salt-induced rancidity)

Morphology (*see also* names of organisms, organs, and tissues)
J 22(3): 841 (and distribution of NE. Pacific *Calycopsis nematophora*)

Morphometry (*see also* Range, extension of; Species, new)
J 22(3): 857 (San Juan Islands six-gill shark)
(5): 1229 (re pygmy whitefish growth)
(6): 1559 (widow rockfish)
S 951 (*Caligus gurnardi* parasitic copepod)

Morrison, Alexander Baillie
J 22(1): 13 (protein quality of cod)

Mortality, freshwater
J 22(4): 913 (temperature effect on Windermere char eggs)

Mortality, ocean
J 22(1): 33 (estimating for sockeye salmon; applications)
(2): 597 (re cod predation on American plaice)
(6): 1523 (rate in pink salmon)
S 940 (total, southern N.S. haddock)
910 (causes of natural and fishing, sea scallops)

Mosquitofish (*Gambia affinis*)
J 22(3): 732 (in Bow River system, Alta.)

Moulting
J 22(2): 453 (harp seals)

Mousette, Marcel
CSG 44 (distribution of cod catches)

Movements (*see also* Distribution; Migration)
J 22(4): 999 (of hatchery-reared lake trout in Lake Superior)

Mummichog, common (*Fundulus heteroclitus*)
J 22(2): 635 (probable toxicity to warm-blooded animals)

Mummichog, freshwater (*see* Killifish, banded)

Munro, Ian Craig
J 22(1): 13 (protein quality of cod)

Murphy, Garth Ivor
J 22(1): 191 (catch equation solution)

Muscle (*see also* Myosin; Protein)
J 22(1): 83 (post-mortem glycolytic changes in Atlantic cod)
(3): 643 (lysolecithinase in Atlantic cod)
(3): 653 (*p*H re halibut flesh chalkiness)
(3): 861 (cause of orange-red colour in scallops)
(4): 929 (oxidative rancidity in lean cod)
(6): 1397 (lateral: effort metabolism of carp)
S 894 (adenine-deaminating enzymes in lingcod)

Muskellunge (*see* Maskinonge)

Mussel, blue (*Mytilus edulis*)
J 22(2): 281 (light effect on growth)
S 891 (water-pumping behaviour recording apparatus)

Mussel, horse (*Vosella modiolus*)
J 22(5): 1137 (low toxicity from *Gonyaulax*)

*Mya arenaria* (*see* Clam, softshell)

Myctophidae (*see* Lanternfishes)

Myosin and myogens
J 22(1): 203, 215 (electropherograms re fish biochemical systematics)

*Mysis relicta* (a malacostracan)
J 22(4): 969 (Algonquin Park, Ont., distribution)

*Mytilicola orientalis* (parasitic copepod)
J 22(4): 1099 (seasonal size distribution re parasitism on Pacific oyster)

*Mytilus edulis* (*see* Mussel, blue)

*Myxocephalus quadricornis* (*see* Sculpin, fourhorn)

Myxophyceae
J 22(5): 1107 (lipid fatty acids)

Myxosporidia
J 22(3): 849 (*Henneguya salmonicola* parasitic in Pacific salmons)

N

*Nassarius obsoletus* (*see* Snail, eastern mud)

Neave, Ferris
S 899 (Pacific salmon)

Nelson, Joseph Schieser
J 22(3): 721 (**dams and fish introduction** effects on Kananaskis fishes)

Nematoda (hookworms, roundworms)
J 22(6): 1387 (*Dactinis*, etc. re Pacific salmons biological information)

Nets
CPO 1965-7 (comparison of, for zooplankton)
S 928 (catch size effect on otter trawl selectivity)
954 (minimum mesh sizes for different materials, re ICNAF regulations)

Newfoundland area
J 22(1): 237 (skate abnormalities)
(2): 259 (**five** rare skate species)
(2): 411 (quality of frozen trap cod)
(2): 465 (cod catch, age, size in Bonavista longlining)
(2): 599 (Humber River and Bay of Islands salmon investigations)
(3): 783 (quality of frozen trap cod)
S 893, 905, 965 (salmon and trout investigation and management research programs)
906 (1964 squid fishery prospects)
970 (new cod fishing grounds off NE. coast)

Nickel compounds
J 22(4): 929 (re oxidative rancidity promotion in cod flesh)

Nickerson, Richard Barrett
J 22(1): 101 (king crabs)

Nicol, Joseph Arthur Colin
J 22(2): 513 (flatfishes retinomotor changes)

Nicola Lake, B.C.
J 22(3): 665 (factors affecting kokanee spawning)

Nitrate
B 125R: 73 (determination for sea water)

Nitrite
B 125R: 79 (determination for sea water)

Nitrogen, organic
B 125R: 89, 143 (determination for sea water)

Nomographs
J 22(6): 1575 (for chlorophyll *a*, *b*, *c* phytoplankton pigment spectrophotometry)

Northcote, Thomas Gordon
J 22(3): 665 (movement of mature kokanee)

Northumberland Strait, Gulf of St. Lawrence
J 22(2): 353 (drift-bottle current measurements)

Northwest Territories, Canada (N.W.T.)
J 22(1): 225 (Fury and Hecla Strait currents)
(6): 1571 (fall domestic fishery at Snowdrift, Great Slave Lake)

Nota, Dirk Johannes Gregorius
S 957 (depositional conditions in the St. Lawrence region)

Nucleosides and nucleotides (*see also* Acids, nucleic)
J 22(2): 307 (of pink shrimp)
S 897 (synthesis by steelhead trout milt extract)
914 (synthesis of cyclic phosphates)

Nutrition value (*see also* Feed)
CVG 34 (antioxidant value in protecting herring meal)
S 929 (fish protein concentrate)
969 (antioxidant value in protecting herring meal)

Nymphomyiidae (aquatic flies)
S 963 (new genus found in N.B.)

O

Oceanography, B.C. coast (*see also* Georgia, Strait of; Pacific Ocean; Pollution)
J 22(3): 801 (pollution re water exchange, Port Moody)
(3): 825 (Indian Arm, re ostracod distribution)
(6): 1425 (salinity and tides re intertidal algae distribution)
CPO 1965-2 (mean monthly surface temperatures)
1965-4 (mean monthly surface salinities)
S 918 (daily and seasonal sea-level oscillations)

Oceanography, Canadian Arctic
J 22(1): 225 (Fury and Hecla Strait currents)

Oceanography, Canadian coastal Atlantic (*see also* Hydrography)
J 22(6): 1321 (surface temperatures and heat exchanges re marine climate)
S 888 (ICNAF research report)
953 (Gulf of St. Lawrence marine geology)

Oceanography, general chemical
J 22(1): 113 (seawater Mg ion activity coefficient)
B 125R (seawater analyses manual)

Oceanography, north and northeast Pacific
J 22(3): 689 (first use of transponding buoys)
S 917 (regions and processes in seasonal zone)
919 (insolation re cloud amount and sun altitude)
925, 927 (INPFC Canadian research reports, 1962, 1963)

Odense, Paul Holger
CHN 20 (identification of fillets)

Odours
J 22(4): 875 (in fishery products caused by dimethyl sulphide)
(4): 929 (associated with oxidative rancidity in cod flesh)
(4): 955 (in salmon canned after partial freezing)

Ogilvie, David Malcolm
J 22(2): 503 (DDT on temperature selection)

Oils, marine animal (*see also* Acids, fatty; Antioxidants; Lipids)
J 22(4): 955 (in salmon and trout canned after partial freezing)

*Oncorhynchus gorbuscha* (*see* Salmon, pink)

*Oncorhynchus kisutch* (*see* Salmon, coho)

*Oncorhynchus nerka* (*see* Salmon, sockeye)

*Oncorhynchus tshawytscha* (*see* Salmon, chinook)

Ontario, Lake (*see* Great Lakes)

*Ophiodon elongatus* (*see* Lingcod)

Ophiuroidea (*see* Brittlestars)

*Osmerus mordax* (*see* Smelt, American)

Ostracoda (*see also* common names)
J 22(3): 823 (diurnal and seasonal distribution changes of two *Conchoecia*)

*Ostrea edulis* (*see* Oyster, European)

Otoliths
J 22(2): 568 (re American plaice age)

Oxygen, dissolved
J 22(1): 159 (mass transfer theory for fish-egg respiration)
(3): 823 (re marine ostracod distribution)
(6): 1491 (consumption re sockeye size and swimming speed)
B 125R: 23 (determination for sea water)
S 892 (re pulp-mill wastes pollution effects)
927 (consumption by lobster)

Oyster, Atlantic (*Crassostrea virginica*)
J 22(2): 281 (light effect on growth)
(2): 631 (ancient shells in now oyster-barren areas)

Oyster, European (*Ostrea edulis*)
S 891 (water-pumping behaviour recording apparatus)

Oyster, Pacific (*Crassostrea gigas*)
J 22(4): 1099 (effect of *Mytilicola* parasite on condition)

P

Pacific Ocean, north (*see also* Oceanography)
S 899 (stocks and fishery developments of salmons)
917 (oceanographic regions and processes in seasonal zone)

Pacific Ocean, northeast (*see also* Oceanography)
J 22(1): 33 (estimating salmon mortality)
(5): 1151 (distribution of two Alepocephalidae)
CPO 1965-2 (B.C. coastal surface temperatures, 1964)
1965-4 (B.C. coastal surface salinities, 1964)
S 918 (daily and seasonal sea-level oscillations, B.C. coast)
925, 926 (salmons research and oceanography)

Pacific Ocean, northwest (*see also* Oceanography)
S 899 (stocks and fishery developments of salmons)

*Pagophilus groenlandica* (*see* Seal, harp)

Paloheimo, Jyri Erkki
J 22(2): 521 (growth of fishes)

Pancreas
S 967 (triglyceride-hydrolyzing lipase from skate)

*Pandalus borealis* (*see* Shrimp, pink)

*Paralithodes camtschatica* (*see* Crab, king)

Parasites and parasitism
J 22(2): 265 (of Jensen's skate)
(3): 849 (myxosporidian, in Pacific salmons)
(4): 1099 (*Mytilicola* seasonal size distribution re parasitism on Pacific oyster)
(4): 1103 (*Anonyx* on lobster)
(5): 1175 (*Piscicola* leech on salmonids)
(6): 1387 (as source of Pacific salmons biological information)
S 925, 926 (aid to distinguishing NE. Pacific salmon stocks)
937 (Trematoda genera review)
948 (Protozoa, in *Limnoria*)
951 (*Caligus gurnardi* copepod review and redescription)

Parker, Robert Ray
J 22(6): 1523 (sea mortality rates for pink salmon)
S 951 (*Caligus gurnardi* Krøyer)

*Parophrys vetulus* (*see* Sole, lemon (Pacific))

Parsons, Timothy Richard
B 125R (a manual of sea water analysis)
S 923 (determination of plant pigments)
924 (microdetermination of chlorophyll)

Pathological conditions (*see* Disease; Injury)

*Pentagramma* (Trematoda)
S 937 (review of genus, and *P. petrowi* on B.C. coast fishes)

*Perca flavescens* (*see* Perch, yellow)

Perch, Pacific Ocean (*see* Rockfish, longjaw)

Perch, yellow (*Perca flavescens*)
B 149: 19, 118 (Great Lakes, catches)

*Percopsis omiscomaycus* (*see* Trout-perch)

*Petromyzon marinus* (*see* Lamprey, sea)

Phosphorus compounds (*see also* Phosphates)
B 125R: 43, 141 (determination for sea water)

Phosphates
J 22(1): 53 (poly-, effects on drip loss and rancidity)
(3): 783 (poly-, effects on thaw-drip of cod fillets)
(3): 793 (phosphatase activity in marine phytoplankters)
(4): 929 (re oxidative rancidity in lean cod flesh)
B 125R: 43 (determination for sea water)

Photography
J 22(4): 1025 (time-lapse, of sonar traces of migrating smolts)

Photoperiods (*see* Light, reactions to)

Photosynthesis
J 22(4): 1083 (re marine phytoplankton carbon balance)
B 125R: 165 (rate measurement in sea water)

Phytoplankton
J 22(3): 793 (phosphatase activity of some marine)
(4): 1083 (carbon balance of marine)
(5): 1107 (lipid fatty acids of marine)
(6): 1575 (nomographs for chlorophyll *a*, *b*, *c* spectrophotometry)
B 125R: 117 (pigment determination for sea water)
S 908 (of Canadian large lakes)

Pickerel (*see* Pike, northern; *also* Walleye)

Pickerel, blue (*see* Pike, blue)

Pickerel, chain (*Esox niger*)
J 22(5): 1261 (hybrids with other Esocidae)

Pickerel, grass (*Esox americanus vermiculatus*)
J 22(5): 1261 (hybrids with other Esocidae)

Pickerel, redfin (*Esox americanus americanus*)
J 22(5): 1261 (hybrids with other Esocidae)

Pickerel, yellow (*see* Walleye)

Pigments and pigmentation
J 22(3): 861 (zeaxanthin cause of scallop orange-red meats)
(4): 955 (re quality of canned partially frozen salmon)
(6): 1575 (nomographs for phytoplankton chlorophyll *a*, *b*, *c*, spectrophotometry)
B 125R: 117 (determination of phytoplankton, in sea water)
CHN 22 (by sulphur compounds in canned products)
S 923, 924 (spectrophotometric determination of marine-plant)

Pike, blue (*Stizostedion vitreum glaucum*) (blue walleye; blue pickerel)
B 149: 19, 118 (Great Lakes, catches)

Pike, northern (*Esox lucius*) (pickerel; jackfish)
J 22(3): 744 (in Bow River system, Alta.)
(5): 1261 (hybrids with other Esocidae)
(6): 1357 (feed of, in Heming Lake, Man.)
B 149: 19, 120 (Great Lakes, catches)

Pike, yellow (*see* Walleye)

Pikeperch, yellow (*see* Walleye)

*Pimephales promelas* (*see* Minnow, flathead)

Pinhorn, Allenby Thomas
J 22(2): 369 (*Salmo salar* behavior)

*Piscicola salmositica* (*see* Leech, salmonid)

Pitt, Thomas Kenton
J 22(1): 247 (modified whirling vessel)

Pituitary glands
S 962 (salmon hormones effect on immature trout gonads)

*Placopecten magellanicus* (*see* Scallop, giant)

Plaice, American (*Hippoglossoides platessoides*)
J 22(2): 565 (life history, ecology, in Magdalen Shallows)
(6): 1345 (lymphocystis disease on eastern Grand Bank)
S 886, 887, 949, 955 (ICNAF research reports)

Plaice, European (*Pleuronectes platessa*)
J 22(2): 513 (retinomotor changes)

Plankton (*see also* Phytoplankton; Zooplankton)
CPO 1965-3, 5, 7, 8 (observations in Strait of Georgia)
S 956 (Caribbean Sea Canadian research)

Plasma, blood
J 22(3): 767 (electropherograms re salmonids and their hybrids for biochemical systematics)
(6): 1455 (composition re goldfish thermal acclimation)

Platford, Robert Frederick
J 22(1): 113 (magnesium ion in sea water)
(4): 885 (sodium ion in sea water)

*Platichthys stellatus* (*see* Flounder, starry)

Plecoptera (*see* Stoneflies)

*Pleuronectes platessa* (*see* Plaice, European)

*Pleuronichthys coenosus* (*see* Sole, C-O)

Poacher, sturgeon (*Agonus acipenserinus*)
J 22(1): 203 (biochemical systematics)

Poisons (*see* Insecticides; Pollution; Toxicity)

*Pollachius virens* (*see* Pollock)

Pollock (*Pollachius virens*)
J 22(6): 1555 (swimbladder volume determination method)
S 887, 955 (ICNAF research reports)

Pollution (*see also* Radioactivity)
J 22(2): 425 (Cu–Zn solutions toxicity to young Atlantic salmon)
(3): 801 (disposal re water exchange, Port Moody, B.C.)
S 892, 907, 959 (problems of pulp-mill wastes disposal)
931, 961 (Cu–Zn solutions toxicity to young Atlantic salmon)
960 (apparatus for studying avoidance by young Atlantic salmon)
964 (mathematical analysis of multivariable environments effects)

*Polyipnus asteroides* (*see* Hatchetfish)

Polyphosphates (*see* Phosphates)

*Pontoporeia affinis* (a malacostracan)
J 22(4): 969 (Algonquin Park, Ont., distribution)

Populations
J 22(2): 395 (brook trout re stream siltiness)
(5): 1197 (year-class fluctuations of Lake Erie whitefish)
(5): 1229 (growth and morphology of pygmy whitefish)
S 902 (management for Canadian fisheries development)

Port Moody, B.C.
J 22(3): 801 (water exchange re pollution disposal)

Potassium compounds
J 22(4): 929 (re oxidative rancidity promotion in cod flesh)

(4): 955 (K ion decrease in salmon held in refrigerated sea water)
(6): 1455 (in goldfish blood plasma)
S 947 (K ion changes in fish held in refrigerated sea water)
957 (in St. Lawrence River and Gulf sediments)

Powell, Guy Charles
J 22(1): 101 (king crabs)

Power, Henry Edwin
CHN 21 (lobster display unit)
S 929 (fish protein concentrate)

Powles, Percival Mount
J 22(2): 565 (Magdalen Shallows plaice)
(6): 1565 (new size record for greysole)

Prakash, Anand
S 916 ("red water" phenomenon)

Predation
J 22(2): 577 (cod on American plaice)

Preservatives and preservative treatments (*see also* Antibiotics; Antioxidants; Freezing; Rancidity; Refrigeration)
J 22(1): 53 (polyphosphates, citrate, and salt against drip loss and rancidity)
S 889 (against bacterial fish spoilage)

Prickleback, longsnout (*Lumpenella longirostris*)
J 22(1): 203 (biochemical systematics)

Prickleback, snake (*Lumpenus sagitta*)
J 22(1): 203 (biochemical systematics)

Prince Edward Island (*see* Bideford River; Ellerslie Brook; Northumberland Strait)

Pritchard, Andrew Lyle
S 902 (population management)

Processing (*see also* individual types of processing)
B 149: 53 (of Great Lakes fisheries)
S 904 (Canadian research on)

Products (*see also* individual types of products; *also* under names of certain fishes)
B 149: 53 (of Great Lakes fisheries)
S 904 (Canadian research on)

Pro-oxidants (*see* Rancidity)

*Prosopium coulteri* (*see* Whitefish, pygmy)

*Prosopium cylindraceum* (*P. quadrilaterale*) (*see* Whitefish, round)

*Prosopium williamsoni* (*see* Whitefish, mountain)

Protein (*see also* Muscle; Protein concentrate)
J 22(1): 13 (salting and smoking effects on quality of cod)
(3): 653 (denaturation re halibut flesh chalkiness)
(4): 955 (proteolysis in canning of feedy salmon)
B 125R: 161 (determination for sea water)
CVG 34 (value of herring meal)
S 969 (value of herring meal)

Protein concentrate ("fish flour")
S 929 (processing and characteristics)

*Psettichthys melanostictus* (*see* Sole, sand)

*Pseudopleuronectes americanus* (*see* Flounder, winter)

*Pterolamiops longimanus* (*see* Whitetip)

Pulpmills
S 892, 907, 959 (wastes disposal problems)

Pumpkinseed (*Lepomis gibbosus*)
J 22(2): 405 (respiratory metabolism re swimming speed)

Pycha, Richard Lawrence
J 22(4): 999 (movement of trout in Lake Superior)

Pyrrophyta
J 22(4): 1083 (carbon balance)

## Q

Quahaug (*Mercenaria mercenaria*)
J 22(2): 281 (light effect on growth)
(2): 631 (ancient shells in now quahaug-barren areas)

Quality of products; quality assessment (*see also* Antibiotics; Antioxidants; Preservatives)
J 22(1): 13 (smoked and salted cod protein)
(1): 17, 27 (carbonyl compounds re salted cod flavour)
(1): 53 (drip loss and rancidity inhibitors for frozen salmon)
(1): 83 (glycolytic changes in cod muscle)
(2): 411 (re freezing rate and frozen stored trap cod)
(3): 783 (thaw-drip of untreated vs. polyphosphate-treated fillets)
(3): 861 (orange-red-pigmented scallop meats)
(3): 865 (re tapeworm cysts in lake whitefish fillets)
(4): 955 (canned partially frozen Pacific salmons)
(5): 1131 (*Limacina* feed affecting B.C. groundfish)
S 889 (preventing bacterial spoilage of fish)
904 (Canadian research on)

Quayle, Daniel Branch
S 948 (marine wood borers)

## R


Radioactivity
S 941 (pollution re B.C. coast marine environment and fisheries)

*Raja erinacea* (*see* Skate, little)

*Raja fyllae* (an Atlantic deep-water skate)
J 22(4): 910 (denticles re identification aid)

*Raja hyperborea* (*see* Skate, arctic)

*Raja jenseni* (*see* Skate, Jensen's)

*Raja laevis* (*see* Skate, barndoor)

*Raja lintea* (a skate)
J 22(2): 265 (Nfld. distribution and scarcity)

*Raja mollis* (a skate)
J 22(2): 268 (Nfld. distribution and scarcity)

*Raja ocellata* (*see* Skate, winter)

*Raja radiata* (*see* Skate, thorny)

*Raja senta* (*see* Skate, smooth)

*Raja spinacauda* (*see* Skate, spinytail)

Rake
S 909 (hydraulic, for softshell clam harvesting)

Ramsay, Barbara Ann
J 22(2): 425 (toxicity of metal salts mixtures to salmon)

Rancidity, oxidative (*see also* Antioxidant)
J 22(4): 955 (development in salmon held in refrigerated sea water)

Range, extension of
J 22(1): 231 (four rockfishes in N. Pacific)
(4): 977 (many NW. Atlantic Mollusca)
(5): 1303 (hatchetfish in W. Atlantic)
(5): 1305 (dusky sculpin into B.C. waters)
(6): 1559 (window rockfish into B.C. coast)

Ratfish (*Hydrolagus colliei*)
J 22(1): 203 (biochemical systematics)

"Red tide"
J 22(4): 1083 (carbon balance of causative dinoflagellates)

"Red water"
S 916 (occurrence on west coast of India)

Redfish (*Sebastes marinus* and *S. mentella*)
S 886, 890, 928, 930, 949, 955 (ICNAF research reports)
928 (catch size effect on otter trawl selectivity)

Refrigerated sea water (*see* Sea water, refrigerated)

Refrigeration
J 22(2): 411 (re freezing rate and quality of frozen trap cod)

Renshaw, Roby Ward
J 22(3): 841 (*Calycopsis nematophora* distribution)

Reproduction (*see also* Eggs)
J 22(1): 101 (king crabs)
(2): 448 (harp seals)

Respiration, and metabolism of
J 22(1): 159 (oxygen mass transfer theory for fish eggs)
(2): 405 (re pumpkinseed swimming speed)
(6): 1491 (re sockeye swimming speed and size)
S 896 (young sockeye swimming energy requirements)
927 (lobster oxygen consumption)

Retina (*see* Eye)

*Rhinichthys atronasus* (= *atratulus*) (*see* Dace, blacknose)

*Rhinichthys cataractae* (*see* Dace, longnose)

Rhode Island, U.S.A.
J 22(4): 945 (estimating theoretical biomass of young winter flounder for a fishery)

Ribonucleic acid (*see* Acids, nucleic)

Richards, Sarah Wheatland
J 22(5): 1313 (postlarvae of the sand lance)

Ricker, William Edwin
J 22(2): 475 (stoneflies)
(6): 1477 (salmon scale annuli)
S 900 (availability of fish)
968 (distribution of Canadian stoneflies)

Rigor
S 947 (re ionic concentration changes in muscle)

Roach, Stewart Williard
J 22(4): 955 (partial freezing of salmon)

Roberts, Eve
J 22(1): 203 (muscle myogens of vertebrates)
(1): 215 (*Oncorhynchus* species identification)
(3): 767 (salmonid hybrids)

*Roccus chrysops* (*see* Bass, white)

Rockfish, copper (*Sebastodes caurinus*)
J 22(1): 203 (biochemical systematics)

Rockfish, dusky (*Sebastodes ciliatus*)
J 22(1): 203 (biochemical systematics)

Rockfish, flag (*Sebastodes rubrivinctus*)
J 22(1): 231 (N. Pacific range extension)

Rockfish, greenstripe (*Sebastodes elongatus*)
J 22(1): 203 (biochemical systematics)

Rockfish, longjaw (*Sebastodes alutus*) (Pacific ocean perch)
J 22(1): 203 (biochemical systematics)
(5): 1309 (rapid length distribution measurement)

Rockfish, northern (*Sebastodes polyspinus*)
J 22(1): 203 (biochemical systematics)

Rockfish, quillback (*Sebastodes maliger*)
J 22(1): 203 (biochemical systematics)

Rockfish, rosethorn (*Sebastodes helvomaculatus*)
J 22(1): 231 (N. Pacific range extension)

Rockfish, rougheye (*Sebastodes aleutianus*)
J 22(1): 203 (biochemical systematics)

Rockfish, sharpchin (*Sebastodes zacentrus*)
J 22(1): 231 (N. Pacific range extension)

Rockfish, spinycheek (*Sebastolobus alascanus*)
J 22(1): 203 (biochemical systematics)

Rockfish, widow (*Sebastodes entomelas*)
J 22(6): 1559 (new to B.C. coast)

Rockfish, yellowtail (*Sebastodes flavidus*)
J 22(1): 203 (biochemical systematics)

Rodriguez, Jorge Luis
J 22(3): 869 (haematology of hake)

Roelofs, Eugene Woodrow
J 22(6): 1379 (photoperiod effects on sunfish)

Ronald, Keith
J 22(5): 1299 (blood clotting in cod)
S 898 (blood of aquatic vertebrates)

Ronquil (*Bathymaster leurolepis*)
J 22(5): 1293 (new species, and key to *Bathymaster*)

Ross, Avron John
J 22(3): 713 (redmouth disease)

Rushton, Donald Kenneth
S 911 (barachois ponds)

## S

Sablefish (*Anoplopoma fimbria*)
J 22(1): 203 (biochemical systematics)

Saila, Saul Bernhard
J 22(4): 945 (juvenile winter flounder)

Salinity
J 22(1): 239 (deep water of Baker Lake, N.W.T.)
(3): 823 (re ostracod distribution, Indian Arm, B.C.)
(6): 1425 (re intertidal algae distribution)
B 125R: 11 (determination for sea water)
CPO 1965-1 (salinometers modifications)
1965-4 (monthly mean surface, at B.C. coastal stations)

*Salmo clarki lewisi* (*see* Trout, Yellowstone cutthroat)

*Salmo clarki* (see Trout, cutthroat)

*Salmo gairdneri* (*see* Trout, steelhead; Trout, rainbow)

*Salmo salar* (*see* Salmon, Atlantic)

*Salmo trutta* (*see* Trout, brown)

Salmon, Atlantic (biology) (*Salmo salar*)
J 22(2): 335 (swimbladder size re buoyancy of parr and smolts)
(2): 369 (behaviour of young in light gradients)
(2): 421 (toggle tag new design)
(2): 425 (Cu–Zn solutions lethal levels for young)
(2): 503 (DDT effect on temperature selection by young)
(2): 599 (Humber River and Bay of Islands, Nfld. investigations)
(2): 625 (Canadian tagged recovery near Greenland)
(3): 732 (unsuccessful transplant into Kananaskis River, Alta.)
(6): 1567 (precocious sexual development in laboratory-reared male)
S 893, 905, 965 (investigation and management research program, 1962–63; 1963–64; 1961–62)
920 (forest spraying re angling)
931 (avoidance of Cu–Zn solutions)
960 (apparatus for studying pollutant avoidance by young)
961 (Zn and Cu effects on migration)

Salmon, chinook (biology) (*Oncorhynchus tshawytscha*) (*see also* Salmons, Pacific)
J 22(1): 167 (mass transfer theory for egg respiration)
(3): 849 (myxosporidian parasite)
S 962 (pituitary hormones effect on immature trout gonads)

Salmon, chinook (products)
J 22(1): 53 (drip and rancidity inhibitors)

Salmon, chum (biology) (*Oncorhynchus keta*) (*see also* Salmons, Pacific)
J 22(4): 919 (stream sediment rate effects on)
(6): 1477 (supplementary checks on scales)

Salmon, coho (biology) (*Oncorhynchus kisutch*) (*see also* Salmons, Pacific)
J 22(1): 173 (environmental and behavioural ecology of juvenile)
(3): 849 (myxosporidian parasite)

(4): 1035 (behaviour, ecology, interaction, re young steelhead)
CPO 1965-6 (NW. Strait of Georgia commercial troll catches)
S 962 (pituitary hormones effect on immature trout gonads)
964 (mathematical treatment of toxic environment effect on young)

Salmon, coho (products)
J 22(4): 955 (canning after holding partially frozen)

Salmon, masu (*see* Masu)

Salmon, pink (biology) (*Oncorhynchus gorbuscha*) (*see also* Salmons, Pacific)
J 22(3): 849 (myxosporidian parasite)
(4): 919 (stream sedimentation rate effects on)
(6): 1477 (supplementary checks on scales)
(6): 1523 (sea mortality rate estimation)
S 937 (parasitism by *Pentagramma petrowi* trematode)
951 (parasitism by *Caligus gurnardi* copepod)
952 (migration, composition, exploitation, abundance, of odd-year Fraser River run)

Salmon, sockeye (biology) (*Oncorhynchus nerka*) (*see also* Kokanee; Salmons, Pacific)
J 22(1): 33 (estimating ocean mortality; applications)
(3): 755 (histology of post-spawning death after maturing and spawning in captivity)
(4): 891 (acetone bodies in blood of starved pre-spawning)
(4): 1025 (recording smolt movements by time-lapse photography of sonar traces)
(6): 1491 (size re swimming speed and $O_2$ consumption)
(6): 1503 (egg and sperm holding time re fertility)
S 896 (swimming energy of young)
937 (parasitism by *Pentagramma petrowi* trematode)
962 (pituitary hormones effect on immature trout gonads)

Salmon, sockeye (products)
J 22(4): 955 (canning after holding partially frozen)
S 947 (Na, K, Mg ion concentration and weight changes re rigor)

Salmon, steelhead (*see* Trout, steelhead)

Salmons, Pacific (biology) (inclusive; *see also* individual species)
J 22(1): 203, 215 (biochemical systematics and speciation)
(5): 1175 (*Piscicola* freshwater leech parasitism)
(6): 1387 (parasites as information source re biology of)
(6): 1563 (degradative digestive rate of feed)
S 899 (ocean stocks and fishery development)
925, 926 (INPFC Canadian research reports, 1962, 1963)
934 (angiography; radiography of cardiovascular system)

Salt, common
J 22(1): 53 (retards drip loss; accelerates rancidity)
(4): 929 (rancidity promoter in lean cod muscle)

Salting and salted products
J 22(1): 13 (salting effects on cod protein quality)
(1): 17, 27 (carbonyl compounds re flavour of cod)

Salts, metal (*see also* Salt, common; *also* names of elements)
J 22(4): 929 (re oxidative rancidity promotion in cod flesh)

*Salvelinus alpinus* (*see* Char, Arctic)

*Salvelinus alpinus willughbii* (*see* Char, Windermere)

*Salvelinus fontinalis* (*see* Trout, brook)

*Salvelinus malma* (*see* Dolly Varden)

*Salvelinus namaycush* (*see* Trout, lake)

Sandfish (*Trichodon trichodon*)
J 22(1): 203 (biochemical systematics)

Sandlances (*Ammodytes* species)
J 22(5): 1313 (description of postlarval stages from W. Atlantic)

*Sarda lineolata* (*see* Bonito, Pacific)

Sarma, Anchal Harish Viswanatha
S 916 ("red water" phenomenon)

Sauger (*Stizostedion canadense*)
B 149: 19, 122 (Great Lakes, catches)

Saunders, John Wilfred
J 22(2): 395 (brook trout population)

Saunders, Richard Lee
J 22(2): 335 (swimbladder of Atlantic salmon)
(2): 625 (Canadian salmon off Greenland)
(6): 1567 (Atlantic salmon development)

Scales
J 22(6): 1477 (supplementary checks on, in salmons)

Scallop, giant (*Placopecten magellanicus*) (sea scallop)

J 22(2): 313 (comparative catches by dragring size)
(3): 861 (orange-red meat due to zeaxanthin pigment)
(5): 1137 (paralytic poison from *Gonyaulax*)
S 887, 955 (ICNAF research reports)
910 (natural and fishing mortality causes)

Scarratt, David Johnson
J 22(2): 421 (new toggle tag)
(4): 1103 (predation on lobsters by *Anonyx*)

Schmidt, Peter Joseph
S 962 (pituitary hormones of salmon)

*Scorpaenichthys marmoratus* (*see* Cabezon)

Scott, William Beverley
J 22(5): 1303 (hatchetfish range extension)

Sculpin, dusky (*Icelinus burchami*)
J 22(5): 1305 (first B.C. record)

Sculpin, fourhorn (*Myoxocephalus quadricornis*)
J 22(4): 969 (Algonquin Park, Ont., distribution)

Sea level
S 918 (daily and seasonal oscillations, B.C. coast)

Sea water
J 22(5): 1107 (fatty acids in dissolved and particulate matter)
B 125R (manual for analysis)
S 912 (system and pumps for large aquarium tanks)

Sea water, refrigerated (for holding fishery products)
J 22(4): 955 (normal and salt-fortified, for salmon before canning)
S 935 (for chilling fish on board vessels)
947 (Na, K, Mg ion concentration in muscle after holding fish in)

Seal, grey (*Halichoerus grypus*)
S 932 (lactating female blubber fatty acid composition)

Seal, harp (*Pagophilus groenlandica*)
J 22(2): 433 (NW. Atlantic migrations)
S 938 (NW. Atlantic industry)

Seal, hooded (*Cystophora cristata*)
S 938 (NW. Atlantic industry)

Seaperch, shiner (*Cymatogaster aggregata*)
J 22(1): 203 (biochemical systematics)

Seaweeds
J 22(6): 1425 (distribution of intertidal re salinity and tides)

*Sebastodes aleutianus* (*see* Rockfish, rougheye)

*Sebastodes alutus* (*see* Rockfish, longjaw)

*Sebastodes caurinus* (*see* Rockfish, copper)

*Sebastodes ciliatus* (see Rockfish, dusky)

*Sebastodes elongatus* (*see* Rockfish, greenstripe)

*Sebastodes entomelas* (*see* Rockfish, widow)

*Sebastodes flavidus* (*see* Rockfish, yellowtail)

*Sebastodes goodei* (*see* Chilipepper)

*Sebastodes helvomaculatus* (*see* Rockfish, rosethorn)

*Sebastodes maliger* (*see* Rockfish, quillback)

*Sebastodes polyspinus* (*see* Rockfish, northern)

*Sebastodes ruberrimus* (*see* Snapper, red)

*Sebastodes rubrivinctus* (*see* Rockfish, flag)

*Sebastodes zacentrus* (*see* Rockfish, sharpchin)

*Sebastolobus alascanus* (*see* Rockfish, spinycheek)

Sedimentation (*see also* Silt)
J 22(3): 801 (re water exchange and pollution in an inlet)
(4): 919 (rate in Alaskan salmon stream)
S 957 (St. Lawrence River and Gulf recent depositional conditions)
959 (mathematical treatment of, for pulpmill effluents)

Selectivity of gear (*see* Nets; Trawl)

*Senecella calanoides* (a copepod)
J 22(4): 969 (Algonquin Park, Ont., distribution)

Sergeant, David Ernest
J 22(2): 433 (harp seal migrations)
S 938 (sealing industry)

*Seriola dumerili* (see Amberjack, greater)

Serum, blood
S 943 (effect on rainbow trout gonadal cell growth)

Sex ratio
J 22(3): 681 (Nicola Lake, B.C., kokanee)
(3): 695 (and sexual dimorphism, immature sea lampreys)

Shapley, Sanford Philip
J 22(4): 919 (sediment in streams)

Shark, dusky (*Carcharhinus obscurus*)
S 956 (Canadian research in Caribbean Sea)

Shark, sandbar (*Carcharhinus milberti*)
S 956 (Canadian research in Caribbean Sea)

Shark, sickle (*Carcharhinus falciformis*)
S 956 (Canadian research in Carribbean Sea)

Shark, sixgill (*Hexanchus griseus*) (*H. corinus*)
J 22(3): 857 (description and morphometry, San Juan Islands specimen)

Shark, tiger (*Galeocerdo cuvieri*)
S 956 (Canadian research in Caribbean Sea)

Sheepshead (*see* Drum, freshwater)

Shell
J 22(2): 281 (growth and structure, Atlantic Oyster, mussel, quahaug)
(2): 631 (ancient oyster and quahaug in now-barren areas)
(3): 851 (Mn deposits on mud snail, P.E.I.)
S 910 (damage repairability of sea scallop)

Shellfish (*see also* common names of species)
S 900 (availability of Canadian)

Shellfish toxicity
J 22(5): 1137 (in Atlantic scallop organs, from *Gonyaulax*)
S 916 (re "red water" on west coast of India)

Shieh, Hang-shan
S 933 (degradation of choline)
936 (degradation of choline)

Shinners, Claude Wayne
CHN 20 (identification of fillets)

Shipworms (*see also* Gribbles)
S 948 (*Bankia* and *Teredo* in B.C. coastal waters)

Shrimp, pink (*Pandalus borealis*)
J 22(2): 307 (nucleotides, sugars, homarine)

Shrimps (Pacific) (*see also* individual species)
J 22(1): 117 (antibiotic preservation)

Silica and silicates
B 125R: 67 (determination for sea water)
S 957 (in St. Lawrence River and Gulf sediments)

Silt (*see also* Sedimentation)
J 22(2): 395 (effect on brook trout stream population)

Sipos, John Charles
S 921 (response of fatty acids and esters in gas chromatography)

Size
J 22(2): 465 (trends in Nfld. longlined cod)
(2): 573 (mature American plaice)
(2): 605 (re age composition of Nfld. salmon)
(3): 679 (Nicola Lake, B.C., kokanee)
(4): 1083 (seasonal distribution of *Mytilicola*, re parasitism on Pacific oyster)
(6): 1372 (of northern pike re size of feed)
(6): 1491 (of sockeye re swimming speed and $O_2$ consumption)
(6): 1565 (new record for witch flounder)
S 908 (to depth relation of lakes)

Skate (a Pacific species)
J 22(1): 203 (biochemical systematics)

Skate, Arctic (*Raja hyperborea*)
J 22(2): 262 (Nfld. distribution and scarcity)

Skate, barndoor (*Raja laevis*)
J 22(1): 237 (snout abnormality)
(4): 910 (denticles re identification aid)
S 967 (triglyceride-hydrolyzing lipase from pancreas)

Skate, Jensen's (*Raja jenseni*)
J 22(2): 264 (Nfld. distribution and scarcity)
(4): 910 (denticles re identification aid)

Skate, little (*Raja erinacea*)
J 22(2): 260 (Nfld. distribution and scarcity)
(4): 899 (distinguishing from winter skate)

Skate, smooth (*Raja senta*)
J 22(4): 910 (denticles re identification aid)

Skate, spinytail (*Raja spinacauda*)
J 22(4): 910 (denticles re identification aid)

Skate, thorny (*Raja radiata*)
J 22(1): 237 (various abnormalities)
(4): 910 (denticles re identification aid)

Skate, winter (*Raja ocellata*)
J 22(4): 899 (distinguishing from little skate)

Skin
J 22(6): 1345 (lymphocystis disease of American plaice)
S 938 (NW. Atlantic seal industry)

Slavin, Joseph William
S 935 (chilling and freezing on board vessels)

Sloan, Phillip Reid
J 22(4): 1083 (phytoplankton photosynthesis)

Smart, Michael John
S 934 (*in vivo* angiography)

Smelt, American (*Osmerus mordax*)
B 149: 20, 122 (Great Lakes, catches)

Smelt, longfin (*Spirinchus dilatus*)
S 937 (*Pentagramma petrowi* trematode parasitism)

Smelt, silver (*see* Smelt, surf)

Smelt, surf (*Hypomesus pretiosus*) (silver smelt)
S 937: 394 (*Pentagramma petrowi* trematode parasitism)

Smith, George Francis Maurice
S 900 (availability of fish)
901 (exploration for fisheries resources)
902 (fish population management)

Smith, Michael
J 22(3): 775 (post-spawning death of salmon)
S 895 (deoxyribonucleic acids of Crustacea)
914 (deoxyribonucleoside phosphate synthesis)
962 (pituitary hormones of salmon)

Smith, Morden Whitney
J 22(2): 395 (brook trout population)
S 911 (barachois ponds)

Smoking and smoked products
J 22(1): 13 (smoking effects on cod protein quality)

"Smut"
CHN 22 (nature and control in canned products)

Snail (marine) (*Limacina helicina*)
J 22(5): 1311 (in feed of B.C. groundfish affects quality)

Snail, eastern mud (*Nassarius obsoletus*)
J 22(3): 851 (Mn deposits on shells, P.E.I.)

Snapper, raspheaded (*see* Snapper, red)

Snapper, red (*Sebastodes ruberrimus*)
J 22(1): 53 (drip and rancidity inhibitors)

Snappers (*Lutjanus* species)
S 956 (Canadian research in Caribbean Sea)

Snout
J 22(1): 237 (abnormality in barndoor skate)

Snowdrift, N.W.T.
J 22(6): 1571 (fall domestic fishery)

Sodium compounds (*see also* Salt)
J 22(4): 885 (Na ion activity coefficient in sea water)
(4): 929 (re oxidative rancidity promotion in cod flesh)
(4): 955 (Na ion increase in salmon held in refrigerated sea water)
(6): 1455 (in goldfish blood plasma)
S 947 (Na ion changes in fish held in refrigerated sea water)
957 (in St. Lawrence River and Gulf sediments)

Solarolo, E.B.
J 22(1): 243 (acid-fast bacteria)

Sole, butter (*Isopsetta isolepis*)
J 22(1): 203 (biochemical systematics)

Sole, C-O (*Pleuronichthys coenosus*)
J 22(1): 203 (biochemical systematics)

Sole, common (*Solea solea*)
J 22(2): 513 (retinomotor changes)

Sole, Dover (*Miscrostomus pacificus*)
J 22(1): 53 (drip and rancidity inhibitors)
(1): 203 (biochemical systematics)

Sole, flathead (*Hippoglossoides elassodon*)
J 22(1): 203 (biochemical systematics)

Sole, lemon (Pacific) (*Parophrys vetulus*)
J 22(1): 203 (biochemical systematics)
(3): 755 (browning of freeze-dried flesh)

Sole, merry (*Microstomus kitt*)
J 22(2): 513 (retinomotor changes)

Sole, petrale (*see* Brill, Pacific)

Sole, rex (*Glyptocephalus zachirus*)
J 22(1): 203 (biochemical systematics)

Sole, rock (*Lepidopsetta bilineata*)
J 22(1): 203 (biochemical systematics)
(5): 1311 (catch contaminated by pelagic snail)

Sole, sand (*Psettichthys melanostictus*)
J 22(1): 203 (biochemical systematics)

*Solea solea* (*see* Sole, common)

Sounding, echo
J 22(4): 1025 (time-lapse photography of, for tracing migrating smolt movements)

Southcott, Burnett Anne
J 22(1): 53 (drip loss of frozen fish)
(1): 117 (tetracycline antibiotics)

Sparks, Albert Kirk
J 22(4): 1099 (*Mytilicola orientalis*)

Spawning (*see also* Life history, etc.)
J 22(2): 574 (Magdalen Shallows American plaice)
(3): 775 (histology after death of post-spawning sockeye)
(3): 665 (factors affecting kokanee migration)

Speciation (*see also* Systematics; Taxonomy)
J 22(1): 203, 215 (by electropherograms of myogen and hemoglobin)
(3): 767 (by electropherograms of myogen, plasma, protein)
(4): 899 (distinguishing little from winter skate)
(5): 1293 (distinction between *Bathymaster* ronquils)

Species, introduced or transplanted
J 22(3): 721 (into Kananaskis and Bow Rivers systems, Alta.)
S 948 (*Limnoria punctata* wood borer to B.C. coastal waters)

Species, new
J 22(1): 1 (decapod *Calocaris templemani*)
(1): 139 (lamprey *Lampetra richardsoni*)
(2): 475 (various Plecoptera stoneflies)
(5): 1293 (ronquil *Bathymaster leurolepis*)

S 933, 936 (choline-fermenting *Achromobacter cholinophagum*)
963 (and genus of Nymphomyiidae found in N.B.)

Species, relict
J 22(4): 969 (Crustacea and fish in Algonquin Park, Ont.)

Spermatozoa (*see* Milt)

*Sphyraena barracuda* (see Barracuda, great)

*Sphyrion lumpi* (parasitic crustacean)
J 22(2): 421 (head shape inspiration for fish tag shape)

*Sphyrna lewini* (*see* Hammerhead, scalloped)

*Spirinchus dilatus* (*see* Smelt, longfin)

Spoilage (*see also* Preservatives; Quality)
S 889 (control in fish products)

Sport fishing (*see also* Angling; Salmon; Trout)
B 149: 107 (Great Lakes)

Sprague, John Booty
J 22(2): 425 (toxicity of metal salt mixtures to salmon)
S 913 (alkaline contamination of tank water supply)
931 (avoidance reactions of fish)
960 (apparatus for studying pollutants avoidance)
961 (determination of safe levels of toxicants)

*Squalus suckleyi* (see Dogfish, Pacific)

Squid, Newfoundland (*Illex illecebrosus*)
J 22(1): 131 (lipids and component fatty acids)
S 906 (1964 fishery prospects)

Squires, Hubert Jacob
J 22(1): 1 (new species of *Calocaris*)
(1): 69 (larvae of *Argis dentata*)

St. Clair, Lake (*see* Great Lakes)

St. Lawrence, Gulf of (*see also* Belle Isle, Strait of; Northumberland Strait)
J 22(2): 433 (harp seal migration)
CSG 44 (distribution of cod catches)
S 950 (water temperatures re herring fishery)
953 (marine geology)
957 (and St. Lawrence River: recent depositional conditions)

Stanley-Jones, Arthur Roland
CPO 1965-1 (modifications to salinometers)

Stephens, Kenneth
J 22(6): 1563 (degradation of consumed organisms)
(6): 1575 (phytoplankton pigment nomographs)
CPO 1965-1 (modifications to salinometers)

Stewart, James Edward
CHN 21 (lobster display unit)
S 898 (blood of aquatic vertebrates)
943 (growth of rainbow trout)

Stickleback, brook (*Culea* (= *Eucalia*) *inconstans*)
J 22(3): 744 (in Kananaskis River system, Alta.)

*Stizostedion canadense* (*see* Sauger)

*Stizostedion vitreum glaucum* (*see* Pike, blue)

*Stizostedion vitreum vitreum* (*see* Walleye)

Stocking
J 22(2): 721 (past, in Kananaskis River system, Alta.)

Stocks
J 22(2): 591 (delineation for American plaice, Magdalen Shallows)
(4): 945 (estimating theoretical biomass for a winter flounder fishery)
S 899, 925, 926 (ocean, of Pacific salmons, and fishery developments)

Stomach
J 22(3): 775 (histology, of post-spawned sockeye)

Stoneflies
J 22(2): 475 (new records and descriptions of new species)
S 966 (effect of DDT forest spraying in N.B.)
968 (Canadian distribution)

Strickland, John Douglas Hipwell
B 125R (manual of sea water analysis)
S 923 (determination of plant pigments)

Strontium compounds
S 941 (radioactive $Sr^{90}$ seawater contaminant)

Sturgeon, lake (*Acipenser fulvescens*)
B 149: 20, 120 (Great Lakes, catches)

Sucker, longnose (*Catostomus catostomus*)
J 22(3): 740 (in Kananaskis River system, Alta.)

Sucker, white (*Catostomus commersoni*)
J 22(1): 219 (fin anomalies, Heming Lake, Man.)
(3): 742 (in Kananaskis River system, Alta.)

Suckers
B 149: 23, 123 (Great Lakes, catches)

Sugars (*see also* Carbohydrates; Glycogen)
J 22(2): 307 (of pink shrimp)
(3): 755 (ribose and glucose re browning of fish flesh)

Sulphur compounds
J 22(4): 875 (apparatus for detecting dimethyl sulphide precursor in fishery products)
CHN 22 (cause of "smut" in canned products)

Sunfish, green (*Lepomis cyanellus*)
J 22(6): 1379 (photoperiod influence on growth)

Superior, Lake (*see also* Great Lakes)
J 22(4): 999 (movements of hatchery-reared lake trout)

Survival
J 22(2): 385 (lobsters out of water)
(4): 919 (stream sedimentation rate effect on young salmon)

Sutherland, Donald Bain
J 22(2): 405 (pumpkinseed respiration)

Swift, Donald Robert
J 22(4): 913 (char egg development and mortality)

Swimbladder
J 22(2): 335 (volume re young Atlantic salmon and trout buoyancy)
(6): 1555 (volume determination method)

Swimming
J 22(2): 405 (speed re pumpkinseed respiratory metabolism)
(2): 523 (effort re growth and feed)
(6): 1491 (speed of sockeye re size and $O_2$ consumption)
S 896 (energy of young sockeye compared with drag force of dead fish)

Swordfish (*Xiphias gladius*)
S 956 (Canadian research in Caribbean Sea)

Systematics (*see also* Speciation; Taxonomy)
J 22(1): 203, 215 (biochemical applications to fishes)
(2): 475 (stoneflies)
(3): 767 (biochemical applications to salmonids and their hybrids)

## T

Tabata, Susumu
S 919 (insolation and cloud amount)

Tagging methods, returns, and interpretation
J 22(2): 421 ("sphyrion" type tag for fish)
(2): 435 (four tag types for harp seals)
(2): 585 (American plaice, Magdalen Shallows)
(2): 625 (Canadian Atlantic salmon recapture near Greenland)
S 925, 926 (NE. Pacific salmons)

Tail
J 22(1): 237 (abnormalities in thorny skate)

*Talismania bifurcata* (a deep-water fish)
J 22(5): 1151 (description and taxonomy of NE. Pacific)

Tapeworms
J 22(3): 865 (candling for *Triaenophorus crassus* cysts in whitefish)
(6): 1335 (*Triaenophorus* procercoids infections of cyclopid copepods)
(6): 1387 (*Triaenophorus, Diphyllobothrium*, etc., re Pacific salmons biological information)

Tarr, Hugh Lewis Aubrey
J 22(2): 307 (shrimp nucleotides)
(3): 755 (freeze-dried fish)
CVG 34 (effect of antioxidants on herring meal)
S 889 (fish microbiology)
894 (lingcod muscle enzymes)
897 (salmon milt extract)
969 (antioxidant treatment of herring meal)

Taxonomy (*see also* Speciation; Systematics)
J 22(2): 475 (Plecoptera)
(5): 1151 (two species of NE. Pacific Alepocephalidae)
S 937 (Trematoda genera *Bacciger* and *Pentagramma*)

Teeth
J 22(2): 259 (comparisons in rare Nfld skates)

Teleostomi
J 22(1): 203, 215 (electropherograms re biochemical systematics)

Temperature, water (oceanographic)
J 22(6): 1321 (re marine climate off Canadian Maritimes)
CPO 1965-4 (mean monthly surface, at B.C. coastal stations)
S 956 (Caribbean Sea)

Temperature, water (reactions to)
J 22(2): 503 (selection by DDT-treated young Atlantic salmon)
(3): 825 (re marine ostracod distribution)
(4): 913 (re char eggs mortality and development rate)
(5): 1213 (re pygmy whitefish biology)
(6): 1455 (re goldfish acclimation and ionic regulation)
S 950 (Iles-de-la-Madeleine herring in commercial fishery)

Templeman, Wilfred
J 22(1): 237 (abnormalities in skates)
(2): 259 (rare skates of Newfoundland)
(4): 899 (distinguishing *Raja* species)
(6): 1345 (lymphocystis disease in American plaice)
S 886 (ICNAF research report, 1962)
949 (ICNAF research areas)

*Teredo navalis* (a mollusc) (*see* Shipworms)

*Thaleichthys pacificus* (*see* Eulachon)

Thawing
J 22(3): 783 (re thaw-drip of Atlantic cod fillets)

*Theragra chalcogrammus* (*see* Whiting (Pacific))

Thermal effects (*see* Temperature)

Thomas, Martin Lewis Hall
J 22(3): 695 (migrating sea lampreys)
(3): 851 (manganese deposits on molluscs)

*Thunnus alalunga* (*see* Albacore)

Tibbo, Simeon Noel
S 950 (water temperature and herring fishing)
956 (fisheries research in Caribbean Sea)

Tides
J 22(6): 1425 (re intertidal algae distribution)

Tomlinson, Neil
J 22(3): 653 (chalkiness in halibut)
(3): 775 (post-spawning death of salmon)
(3): 849 (myxosporidian parasite)
(4): 955 (partial freezing of salmon)
S 947 (sodium, potassium, and magnesium in fish)

Tooth (*see* Teeth)

Toxicity (*see also* Shellfish toxicity)
J 22(2): 425 (Cu–Zn solutions to young Atlantic salmon)
(2): 635 (probable, of mummichogs to warm-blooded animals)
S 931 (of Cu and Zn solutions to Atlantic salmon)
963 (mathematical analysis of, re juvenile coho environment)

Transplantation (*see* Species, introduced)

Transport, mass
J 22(1): 159 (theory re fish-egg respiration)

Trawl, otter
S 928 (catch size effect on selectivity for flatfish)

Trematoda (*see* Flukes)

*Triaenophorus* species (*see* Tapeworms)

Triglycerides (*see* Acids, fatty; Lipids)

Trolling
CPO 1965-6 (Strait of Georgia commercial coho catches)

Trout, alpine (*see* Char, alpine)

Trout, brook (*Salvelinus fontinalis*) (speckled trout)
J 22(2): 335 (swimbladder size re buoyancy of young)
(2): 395 (stream population changes re silt)
(3): 738 (in Kananaskis River system, Alta.)
(3): 767 (and hybrids biochemical differentiation)
S 893, 905, 965 (investigation and management research program, 1962–63, 1963–64, 1961–62)
911 (suitability of barachois ponds for)

Trout, brown (*Salmo trutta*)
J 22(3): 738 (in Kananaskis River system, Alta.)
(3): 767 (and hybrids biochemical differentiation)

Trout, cutthroat (*Salmo clarkii*)
J 22(3): 739 (in Kananaskis River system, Alta.)

Trout, lake (*Salvelinus namaycush*) (*Cristivomer namaycush*)
J 22(3): 744 (in Bow River system, Alta.)
(3): 761 (corneal lesions in hatchery-reared)
(3): 767 (and hybrids biochemical differentiation)
(4): 999 (movements of hatchery-reared in Lake Superior)
(6): 1571 (in fall domestic fishery at Snowdrift, Great Slave Lake)
B 149: 18, 121 (Great Lakes, catches)
S 946 (Great Slave Lake fishery)

Trout, rainbow (*Salmo gairdnerii*)
J 22(3): 713 (oral immunization against "redmouth disease")
(3): 740 (in Kananaskis River system, Alta.)
(3): 767 (and hybrids biochemical differentiation)
(4): 891 (ketone bodies in blood of starved pre-spawning)
(4): 955 (canning after holding partially frozen)
S 893, 905, 965 (investigation and management research program, 1962–63, 1963–64, 1961–62)
911 (suitability of barachois ponds for)
943 (gonadal cell culture stimulation by serum)
947 (Na, K, Mg ion concentration and weight changes re rigor)
962 (effect of salmon pituitary hormones on gonads of immature)

Trout, speckled (*see* Trout, brook)

Trout, steelhead (*Salmo gairdnerii*)
J 22(1): 167 (mass transport theory for egg respiration)
(1): 203 (biochemical systematics)
(4): 1035 (behaviour, ecology, interaction, re young coho)
(5): 1175 (*Piscicola* freshwater leech parasitism)
S 897 (mononucleotide synthesis by milt extract)
925, 926 (INPFC Canadian research reports, 1962, 1963)

Trout, Yellowstone cutthroat (*Salmo clarki lewisi*)
J 22(1): 203 (biochemical systematics)

Trout-perch (*Percopsis omiscomaycus*)
J 22(3): 744 (in Bow River system, Alta.)
(4): 969 (Algonquin Park, Ont., distribution)

Tsuyuki, Hiroshi
J 22(1): 203 (muscle myogens of vertebrates)
(1): 215 (*Oncorhynchus* species identification)
(3): 767 (salmonid hybrids)
S 962 (pituitary hormones of salmon)

Tullibee
B 149: 21, 119 (Great Lakes, catches)

Tully, John Patrick
S 917 (oceanographic region in the north Pacific)

Tunas
S 935 (chilling and freezing on board vessels)
956 (Canadian research in Caribbean Sea)

Turtle, leatherback (*Dermochelys coriacea coriacea*)
S 945 (dermal oil fatty acids)

U

Ungava Bay
J 22(1): 69 (decapod *Argis dentata* larvae and megalopa)

Uthe, John Frederick
J 22(4): 955 (partial freezing of salmon)

V

Vanstone, William Edward
J 22(1): 203 (muscle myogens of vertebrates)
(1): 215 (*Oncorhynchus* species identification)

Vernon, Edwin Herman
S 952 (odd-year pink salmon in the IPSFC convention area)

Vertebrae
J 22(1): 237 (abnormalities in thorny skate)

Vessels, fishing
S 935 (preservation of catch aboard)
946 (Great Slave Lake fleet, 1945–63)

Viscera
J 22(1): 131 (lipids and component fatty acids of squid)

Vitamin B group
S 915 ($B_{12}$ re structure and reactions of cobamide coenzymes)
929 (analysis of cod protein concentrate)

Vladykov, Vadim Dmitrovich
J 22(1): 139 (*Lampetra richardsoni*)

*Vosella modilus* (*see* Mussel, horse)

W

Waldichuk, Michael
J 22(3): 801 (water exchange and waste disposal)
S 892 (water pollution)
907 (foams in kraft pulp and newsprint effluents)
918 (sea-level oscillations)
941 (radioactive contamination)

Walleye (*Stizostedion vitreum vitreum*) (yellow walleye; yellow pickerel; yellow pike; doré; yellow pikeperch)
B 149: 19, 122 (Great Lakes, catches)

Walleye, blue (*see* Pike, blue)

Walleye, yellow (*see* Walleye)

Watson, Nelson Herbert Frank
J 22(6): 1335 (natural infections of cyclopid copepods)

Watt, Alexander
J 22(3): 793 (phytoplankter enzymes)

Webb, Donald Wayne
J 22(5): 1123 (limnology of Cedar Lake)

Weight (*see also* Length–weight ratio)
J 22(2): 465 (trends in Nfld. longlined cod)
S 947 (changes of fish held in refrigerated sea water re rigor)

Weinstein, Harvey Marvin
J 22(1): 83 (glycolytic activity in cod muscle)

Werner, Arthur Eugene
S 959 (suspended solids from mill effluents)

Westrheim, Sigurd Jergen
J 22(1): 231 (northern range of rockfish)
(6): 1559 (widow rockfish)

White, Harley Clifford
J 22(2): 635 (killifish)

Whitefish, lake (*Coregonus clupeaformis*)
J 22(3): 732 (in Bow River system, Alta.)
(3): 865 (candling fillets for tapeworm cysts)
(5): 1197 (populations year-class fluctuations in Lake Erie, and other large lakes)

(6): 1571 (in fall domestic fishery at Snowdrift, Great Slave Lake)
B 149: 18, 118 (Great Lakes, landings)
S 946 (Great Slave Lake fishery)

Whitefish, mountain (*Prosopium williamsoni*)
J 22(3): 733 (in Kananaskis River system, Alta.)

Whitefish, pygmy (*Prosopium coulteri*)
J 22(5): 1229 (growth and morphometry of four B.C. populations)

Whitefish, round (*Prosopium cylindraceum*) *P. quadrilaterale*) (menominee)
B149: 22 (Great Lakes catch)

Whitetip (*Pterolamiops longimanus*)
S 956 (Canadian research in Caribbean Sea)

Whiting (Pacific) (*Theragra chalcogrammus*)
J 22(1): 203 (biochemical systematics)
(5): 1107 (liver lipid fatty acids)

Wickett, William Percy
CPO 1965-6 (coho commercial troll catches)

Widdowson, Thomas Benjamin
J 22(6): 1425 (distribution of intertidal algae)

Wilder, Donald George
CSG 45 (message to lobster fishermen)

Wiley, William Lloyd
J 22(4): 1025 (recording of fish movements)

Williams, Peter Montague
J 22(5): 1107 (marine fatty acids)

Winnipeg, Lake
S 900 (availability of fishes)
908 (limnology)

Winnipegosis, Lake
S 900 (availability of fishes)

Wittenberger, Carol
J 22(6): 1397 (carp metabolism)

Wood borers
S 948 (dispersal of introduced species in B.C. coastal waters)

## X

X-ray
S 934 (angiography of Pacific salmon)

*Xiphias gladius* (*see* Swordfish)

## Y

Yurkowski, Michael
J 22(1): 17, 27 (carbonyl compounds in cod)
(3): 643 (lysolecithinase of cod)

## Z

Zinc compounds
J 22(2): 425 (lethal levels Zn–Cu pollutants to salmon)
(4): 929 (re oxidative rancidity promotion in cod flesh)
S 931, 961 (toxicity for Atlantic salmon)
941 (radioactive $Zn^{65}$ seawater contamination)

Zooplankton
J 22(1): 69 (decapod *Argis dentata* in Ungava Bay)
(2): 543 (Canadian Arctic, NW. Canadian Atlantic, Beaufort Sea)
(5): 1107 (lipid fatty acids of marine)
CPO 1965-3, 5, 7, 8 (Strait of Georgia)
S 908 (of Canadian large lakes)

## LISTS OF PUBLICATIONS

### BULLETINS OF THE FISHERIES RESEARCH BOARD OF CANADA

125. STRICKLAND, J. D. H., AND T. R. PARSONS. A manual of sea water analysis (with special reference to the more common micronutrients and to particulate organic material). (Second edition, revised), 203 p.

149. FRICK, HAROLD C. Economic aspects of the Great Lakes fisheries of Ontario. 160 p.

### CIRCULARS OF THE FISHERIES RESEARCH BOARD OF CANADA

*Halifax Laboratory, Halifax, N.S. (CHN)*

20. ODENSE, P. H., C. W. SHINNERS, AND T. C. LEUNG. Report to the fishing industry on the identification of fresh and frozen fillets of cod, haddock and other species. 2 p.

21. STEWART, JAMES E., AND H. E. POWER. Unit suitable for holding and displaying live lobsters. 6 p.

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*Biological Station, St. John's, Nfld. (CJG)*

12. ANON. Fishery investigations and groundfish landings—Newfoundland 1964. 28 p.

*Pacific Oceanographic Group, Nanaimo, B.C. (CPO)*

1965-1. STANLEY-JONES, A. R., AND K. STEPHENS. Modifications to salinometers in use at P.O.G. 6 p.

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1965-3. ANON. Cruise report: *Ehkoli*, March 1–21. 5 p.

1965-4. HOLLISTER, H. J. Seawater salinities at British Columbia coastal stations during 1964. 12 p.

1965-5. ANON. Cruise report: *Ehkoli*, April 5–14. 6 p.

1965-6. WICKETT, W. P. Coho commercial troll catches in Area 14, the northwestern portion of the Gulf of Georgia. 6 p.

1965-7. ANON. Cruise report: *Whitethroat*, July 19–31. 6 p.

1965-8. ANON. Cruise report: *Whitethroat*, Aug. 23–Sept. 3. 9 p.

*Biological Station, St. Andrews, N.B. (CSG)*

44. MOUSETTE, MARCEL, F. D. MCCRACKEN, AND ALEXANDRE MARCOTTE. Distribution of cod catches by commercial vessels in the Gulf of St. Lawrence 1960–1962. 15 p.

45. WILDER, D. G. 1965. Wanted—alive not dead! A message to lobster fishermen. 7 p.

*Vancouver Laboratory, Vancouver, B.C. (CVG)*

34. MARCH, B. E., JACOB BIELY, H. L. A. TARR, AND F. G. CLAGGETT. Favourable effect of antioxidants on metabolizable energy and protein value of British Columbia herring meal. 9 p.

35. CLAGGETT, F. G. Control of spontaneous heating in British Columbia herring meals. 20 p.

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886. TEMPLEMAN, W. 1963. Canadian research report, 1962. Subareas 2 and 3 [of the ICNAF Convention Area]. Int. Comm. Northwest Atlantic Fisheries, Redbook 1963, Part II, p. 3–13.

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